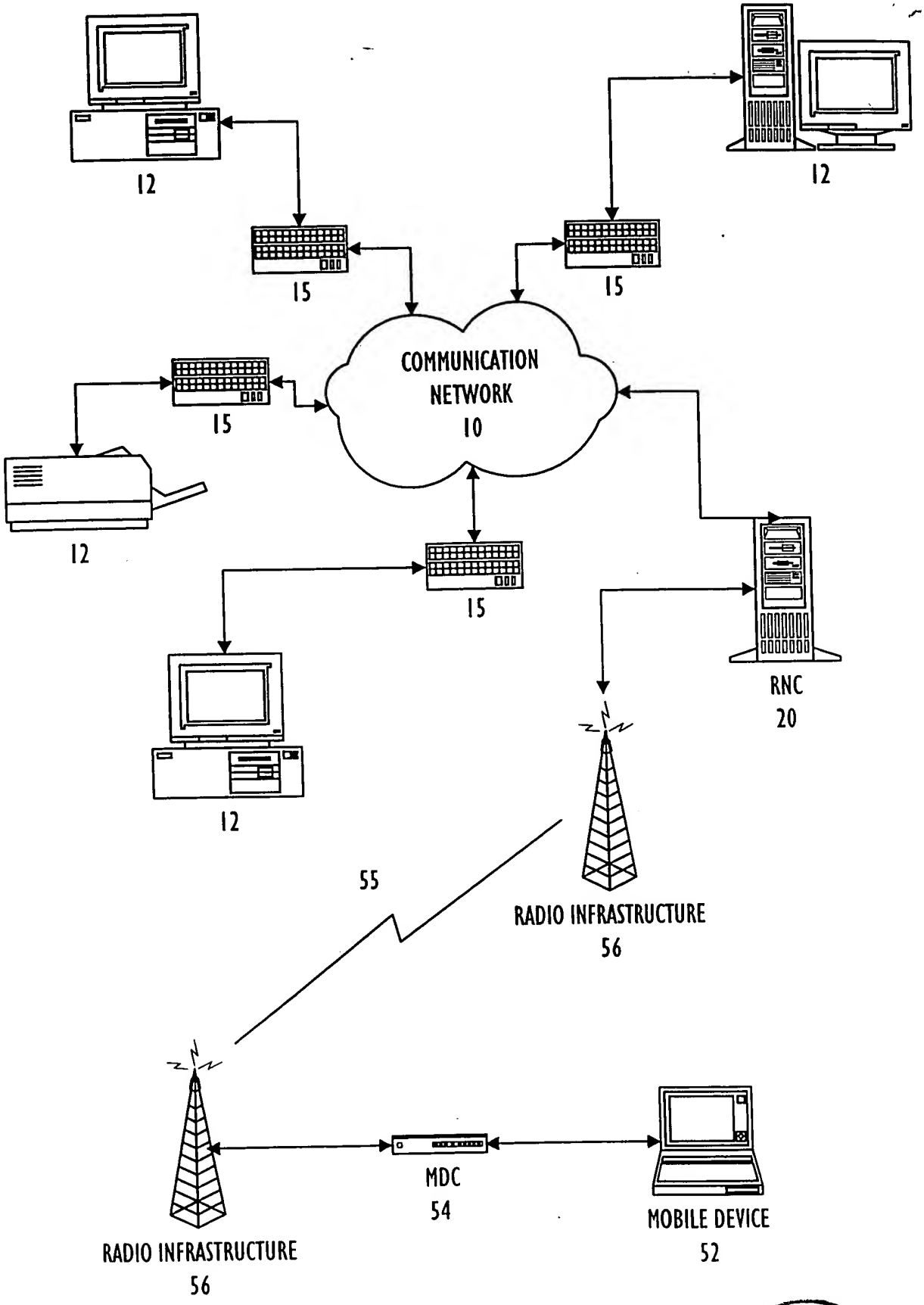
12
12
15
15
COMMUNICATION
NETWORK
10
15
12
15
RNC
20
12
55
RADIO INFRASTRUCTURE
56
MDC
54
MOBILE DEVICE
52
RADIO INFRASTRUCTURE
56

FIG. 1

39

FIG. 2

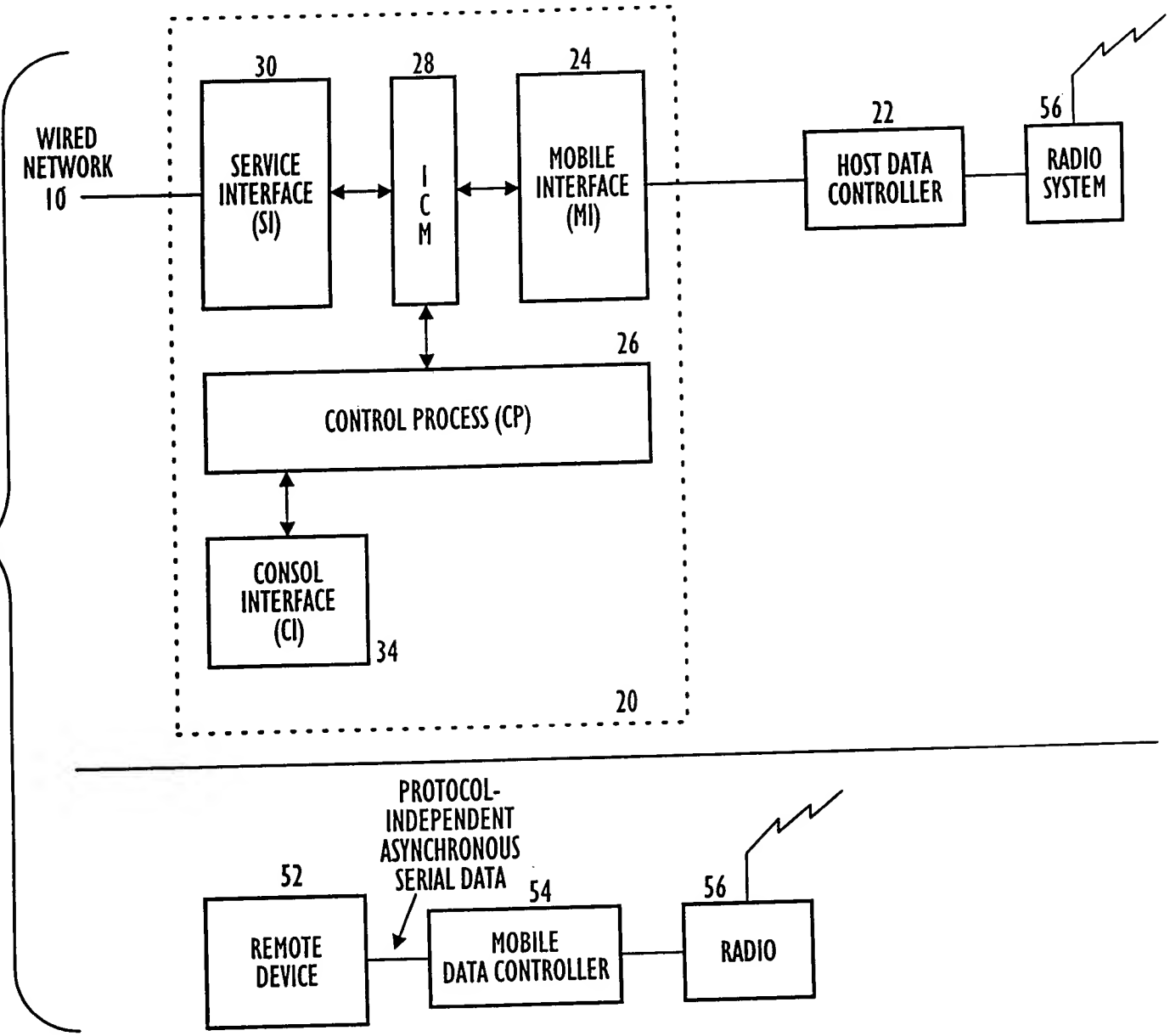

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FIG. 3

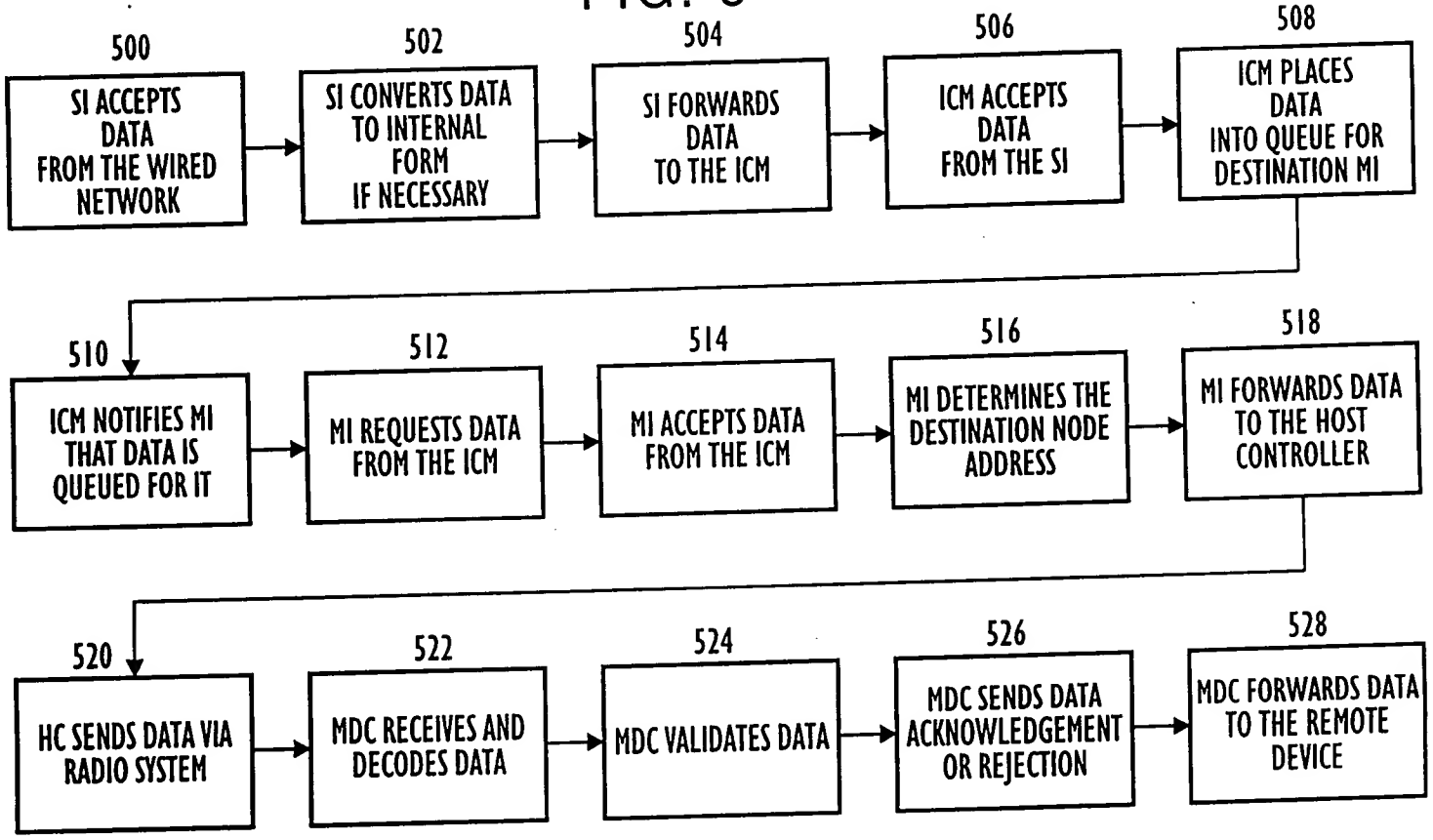

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FIG. 4

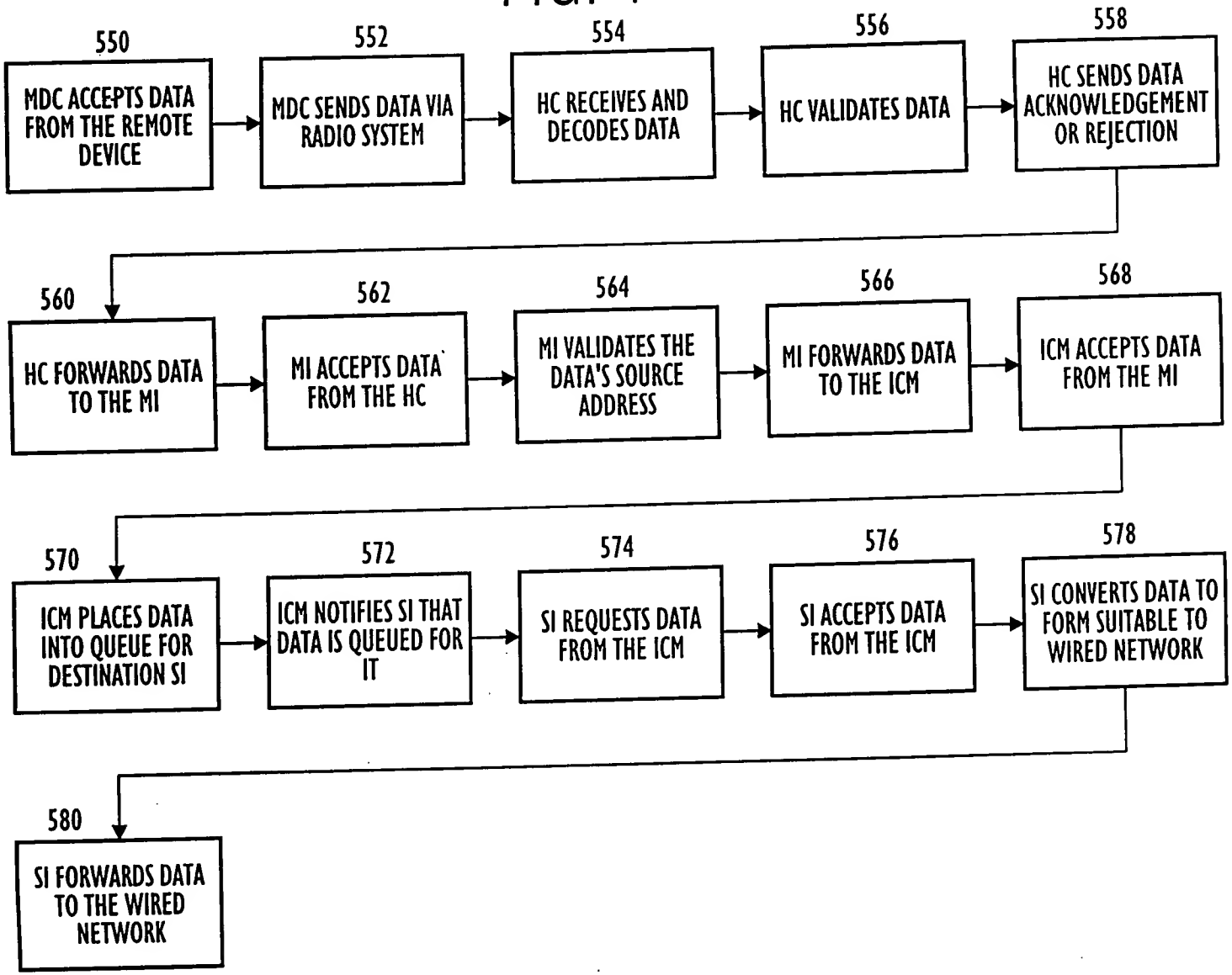

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FIG. 5

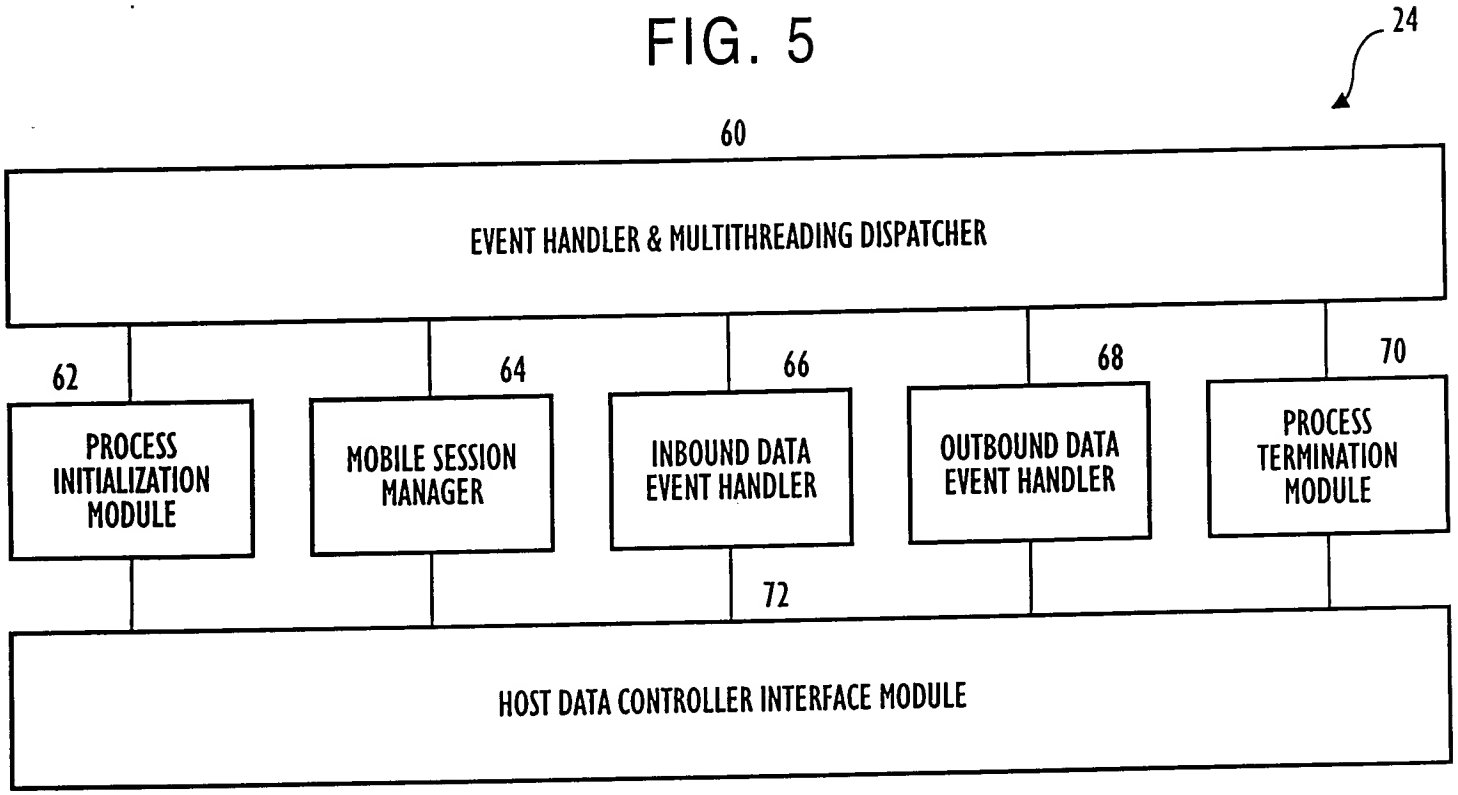

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FIG. 6

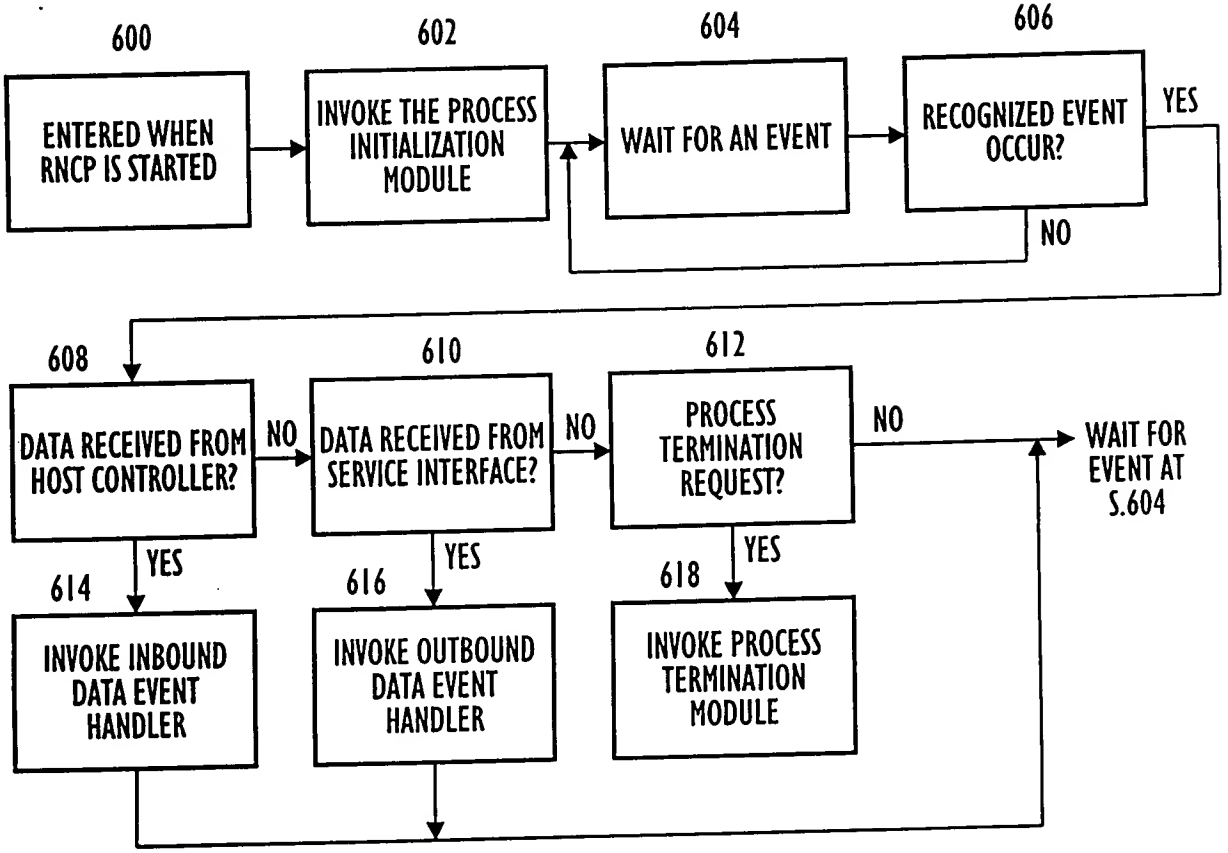

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FIG. 7

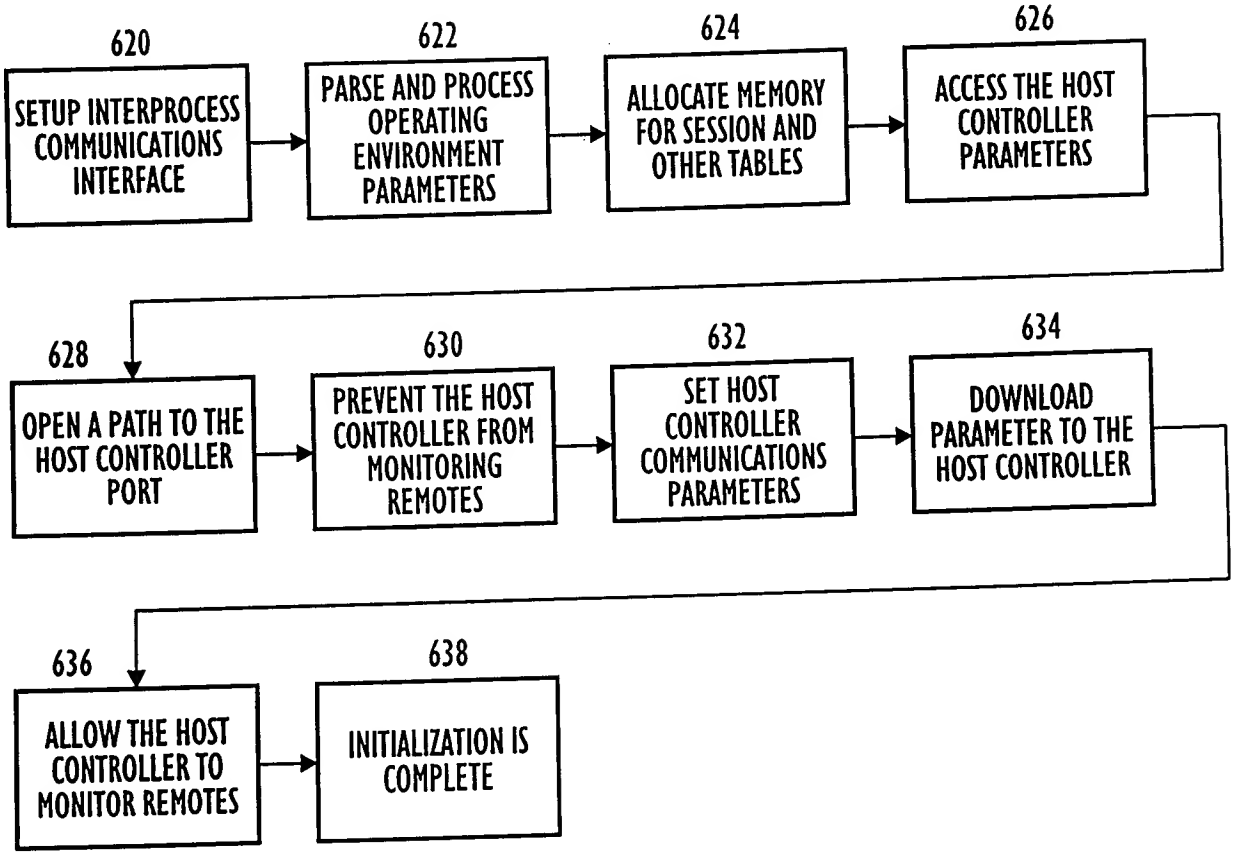

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FIG. 8

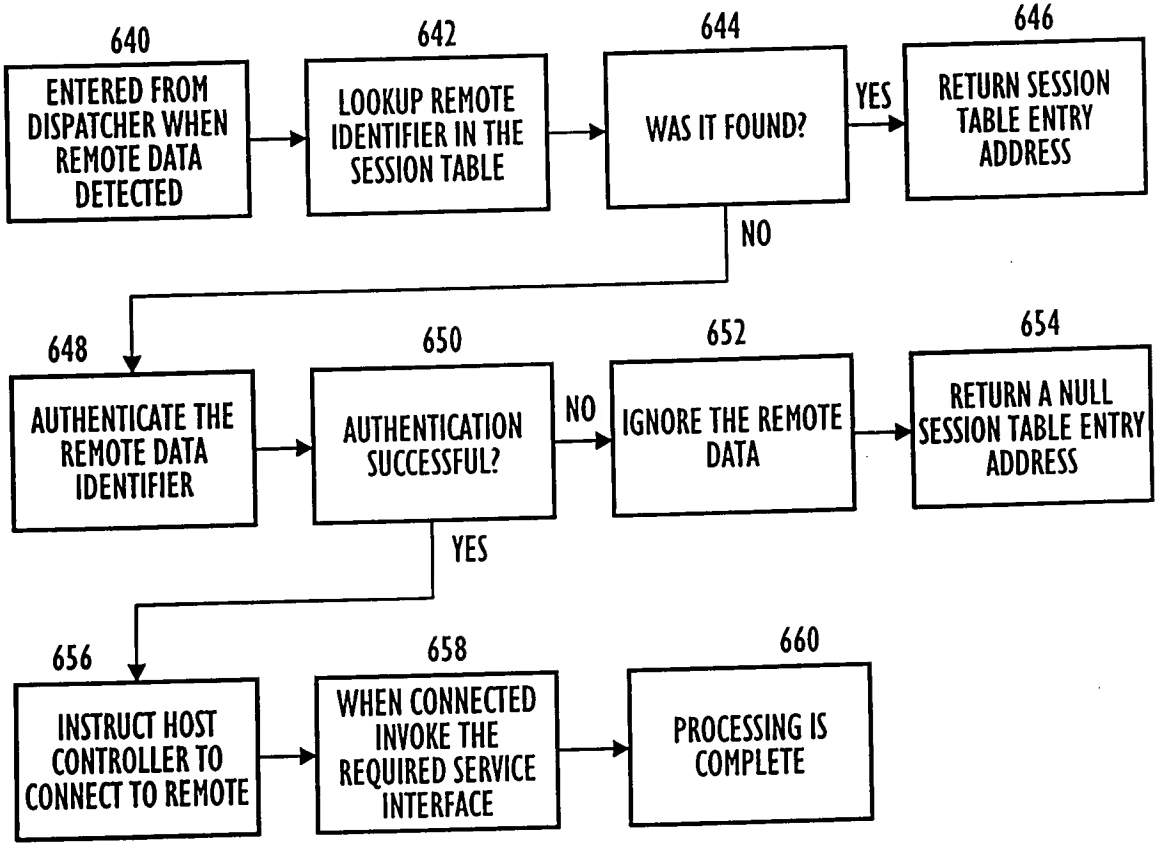

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FIG. 9

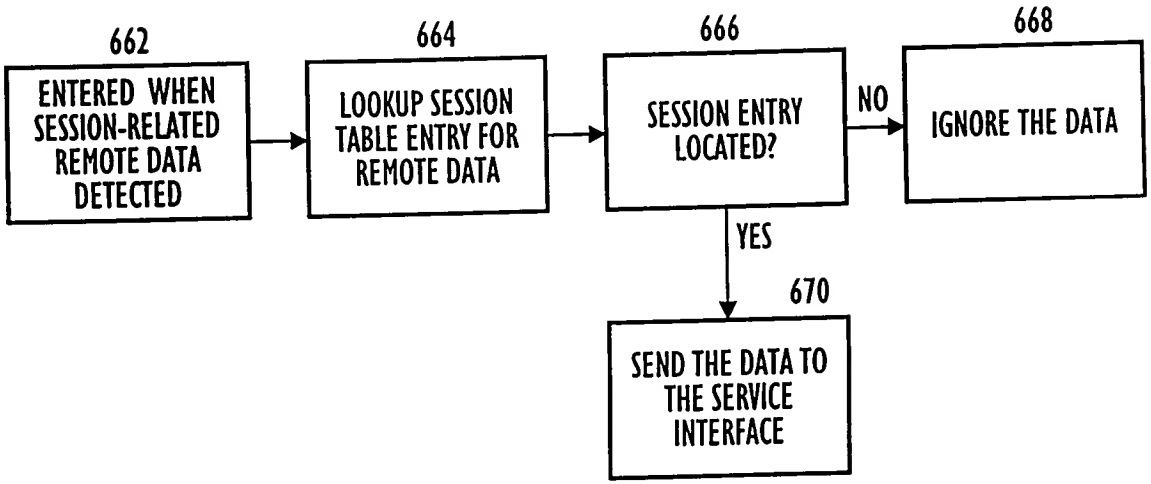

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FIG. 10

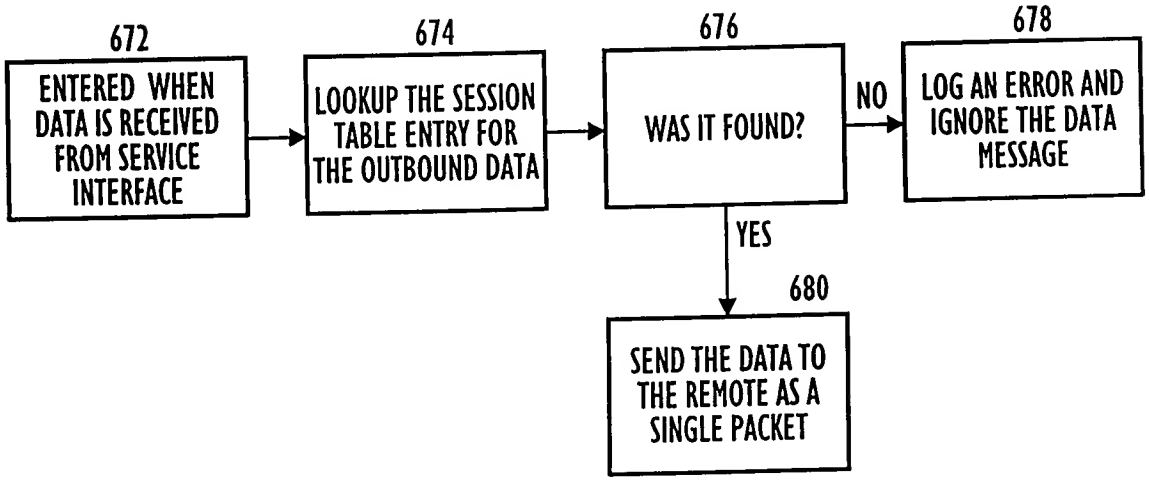

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FIG. 11

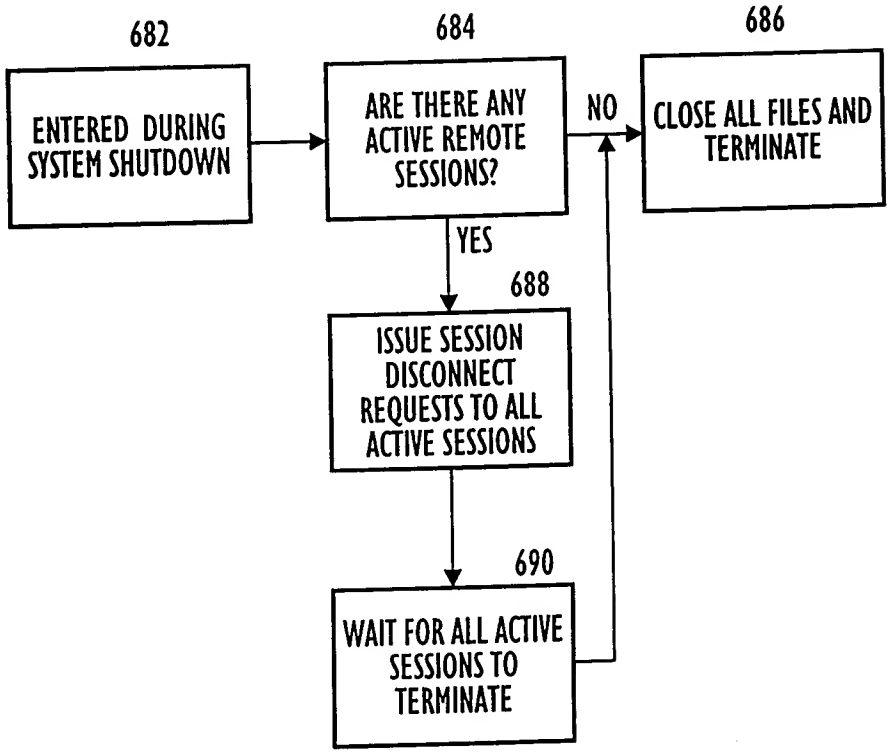

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FIG. 12

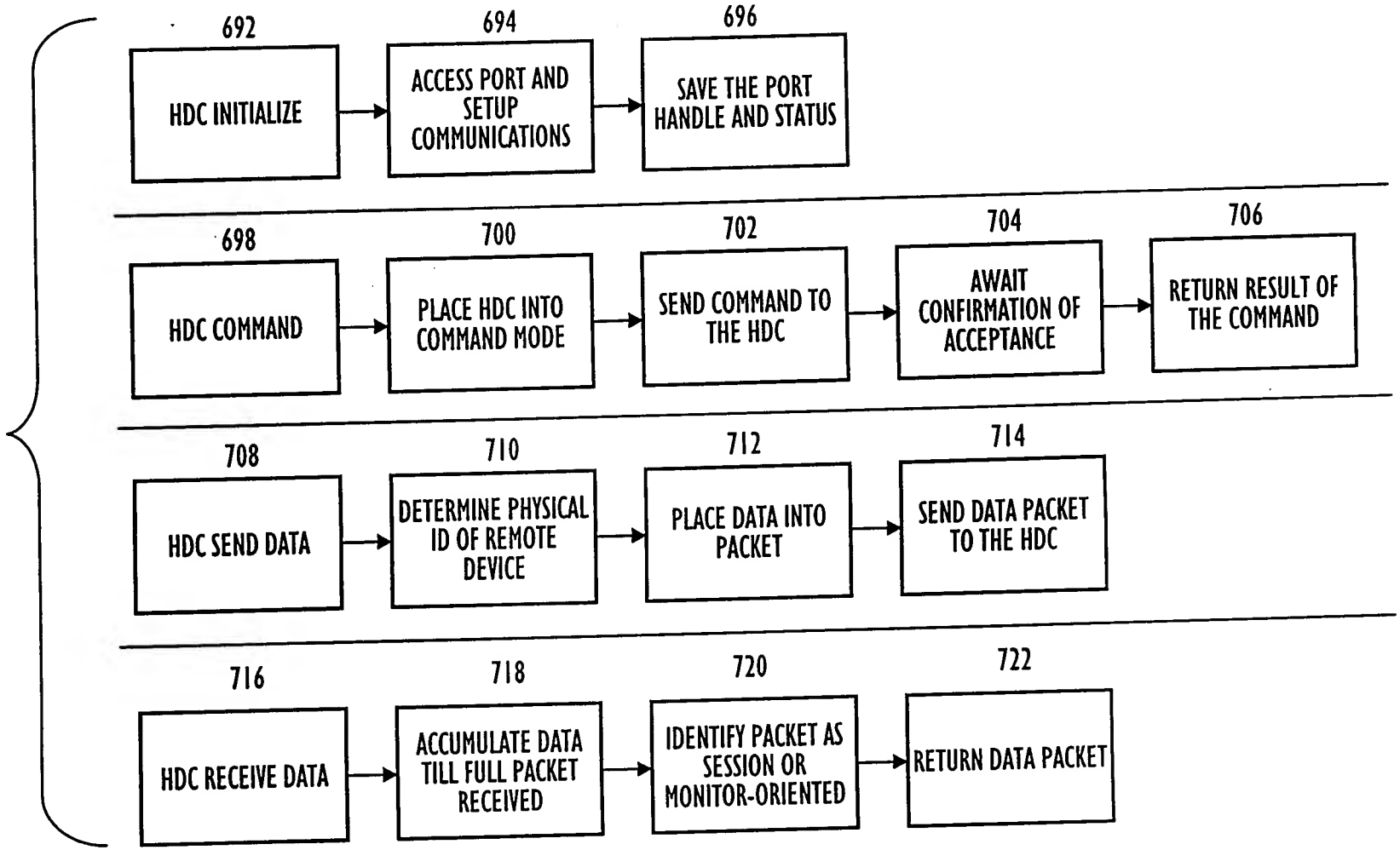

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FIG 13

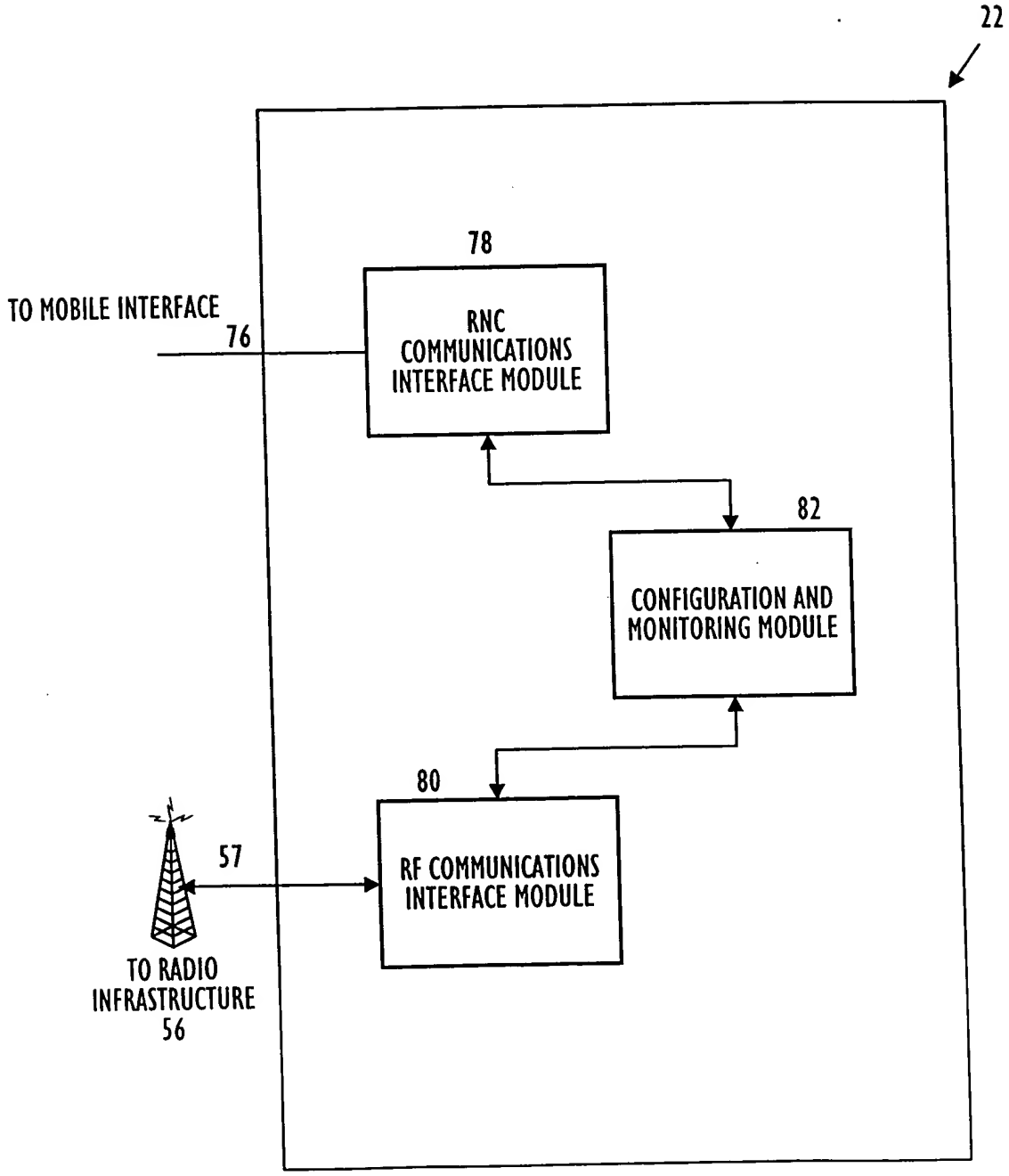
22
78
TO MOBILE INTERFACE
76
RNC COMMUNICATIONS INTERFACE MODULE
82
CONFIGURATION AND MONITORING MODULE
80
57
RF COMMUNICATIONS INTERFACE MODULE
TO RADIO INFRASTRUCTURE 56

FIG. 14

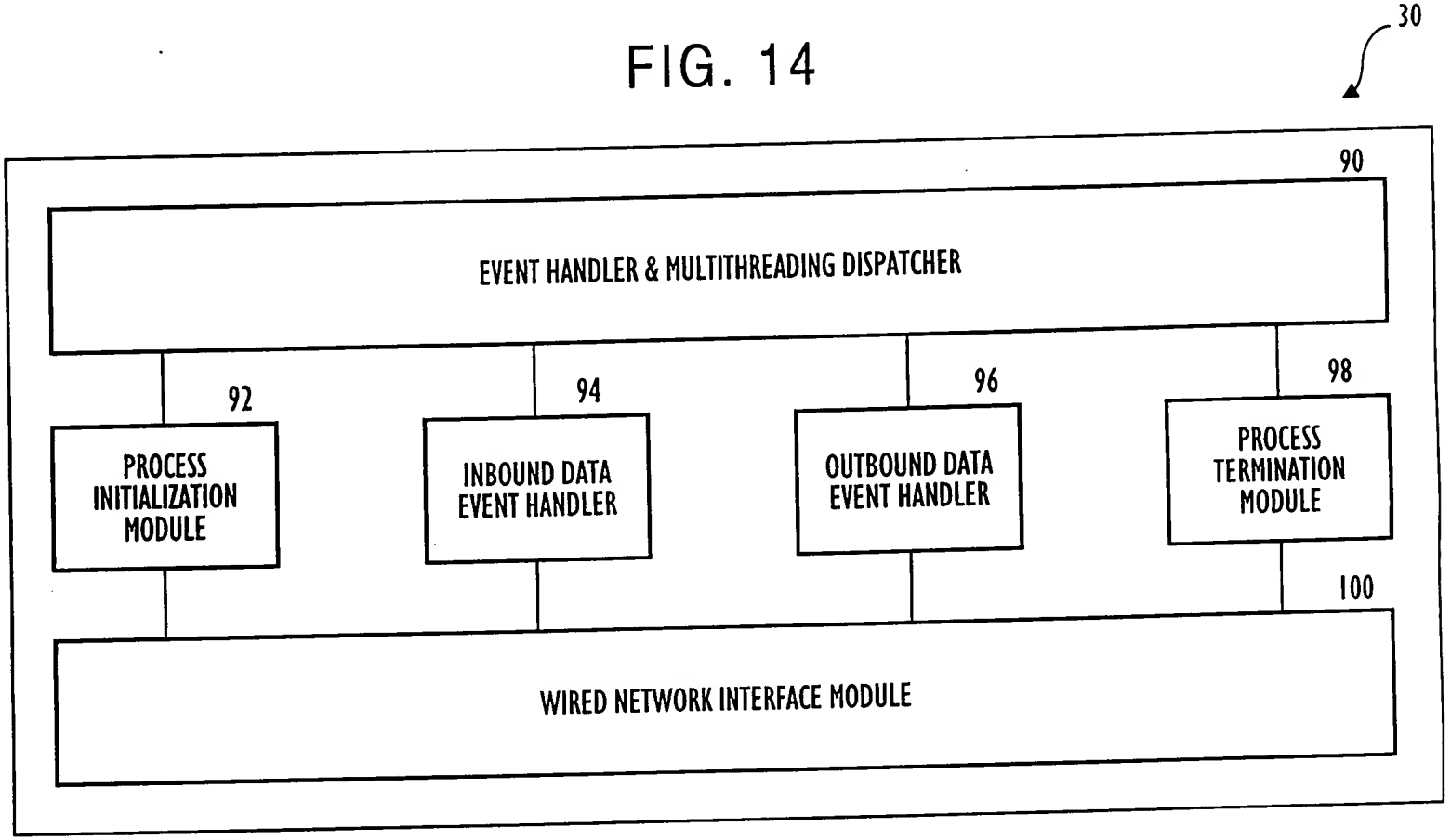

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FIG. 15

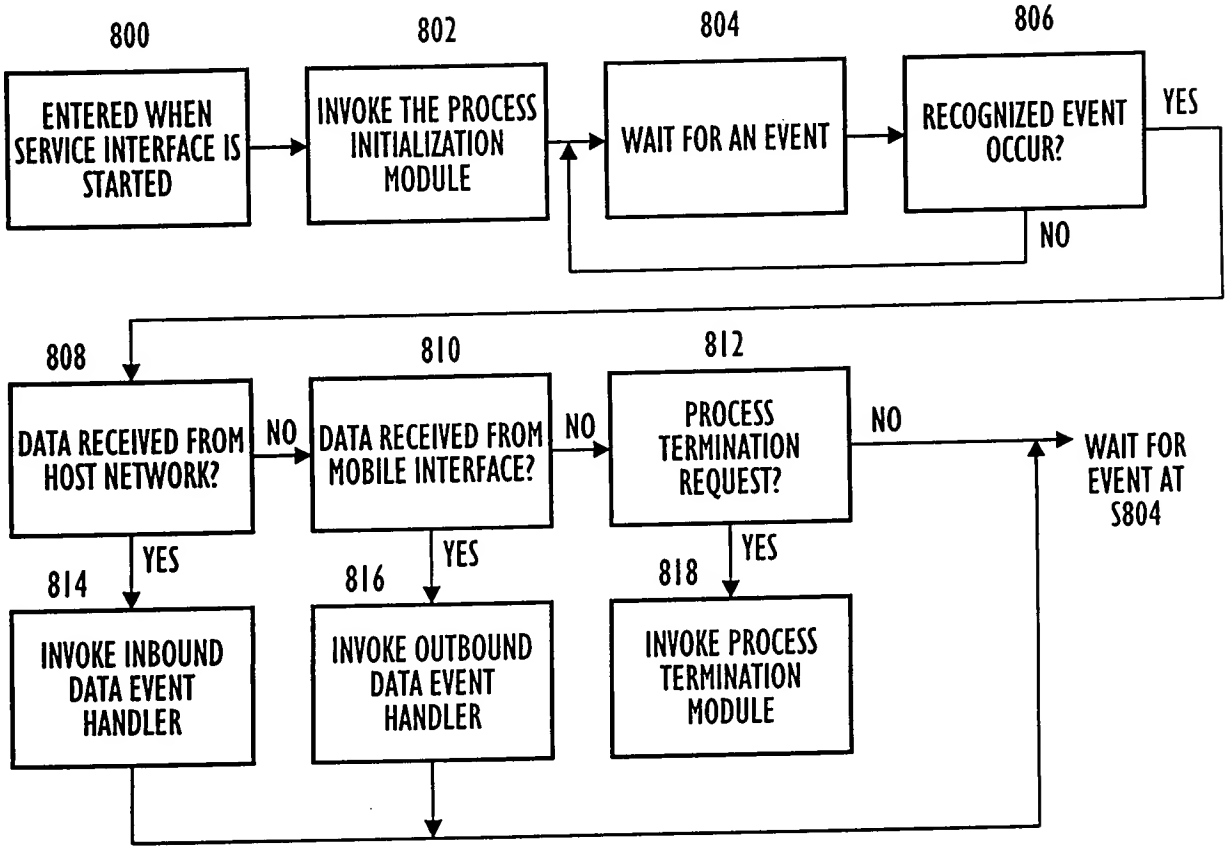

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FIG. 16

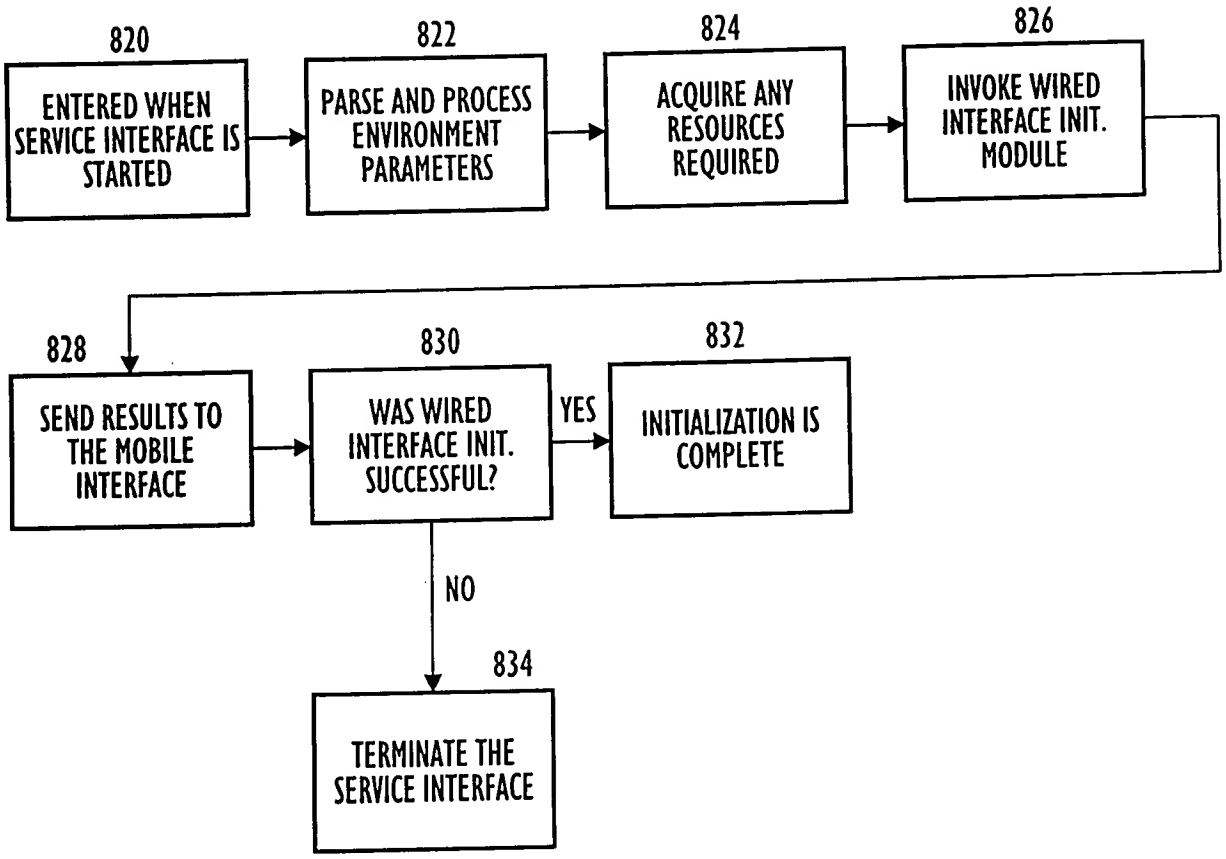

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FIG. 17

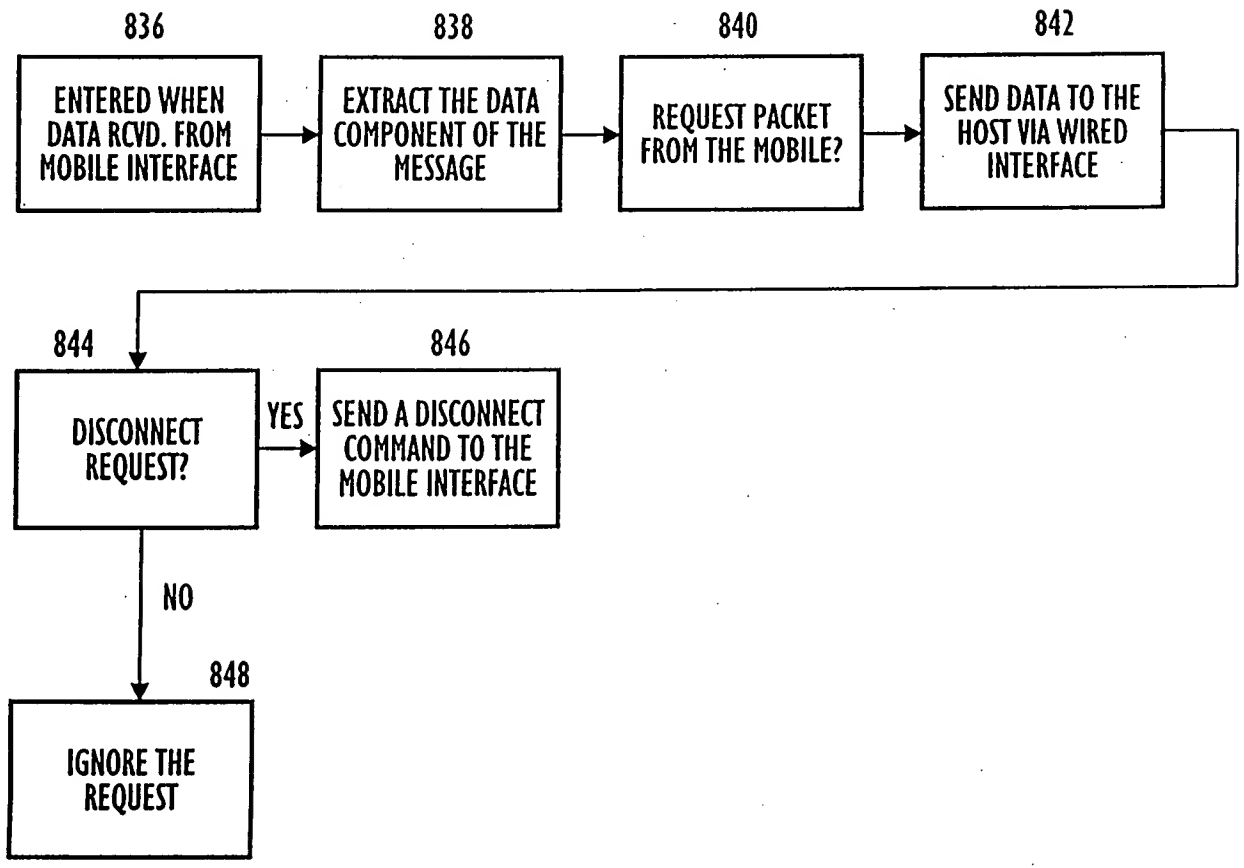

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FIG. 18

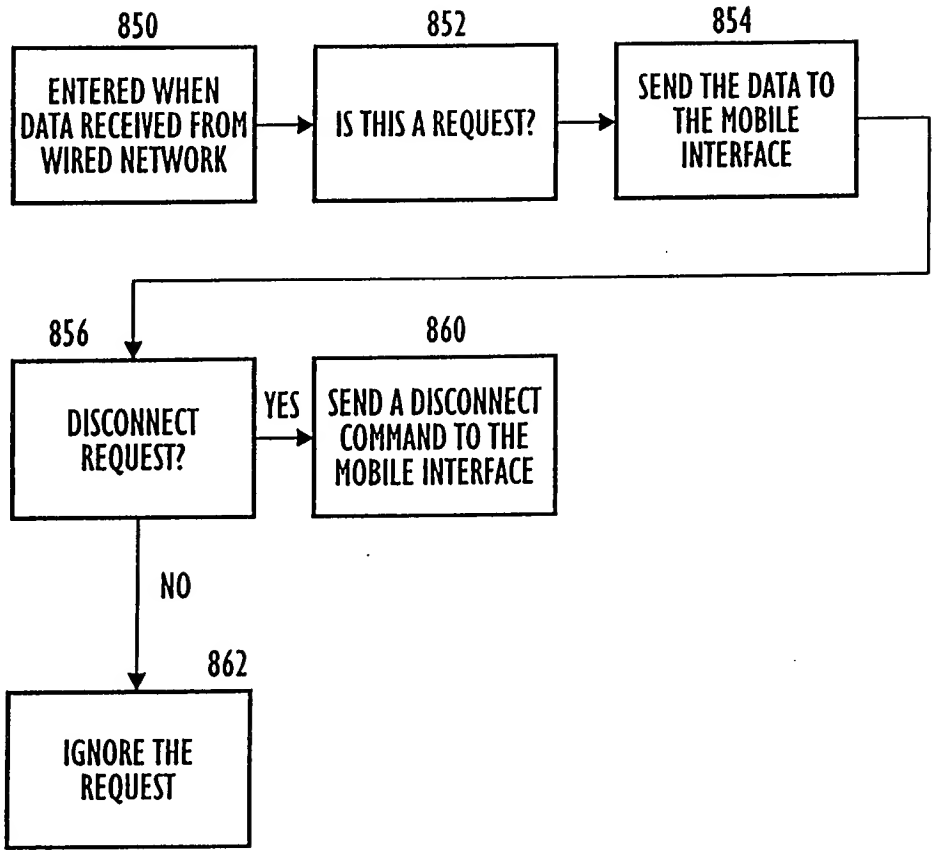

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FIG. 19

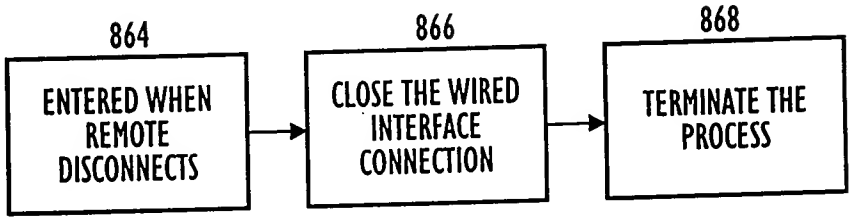

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FIG. 20

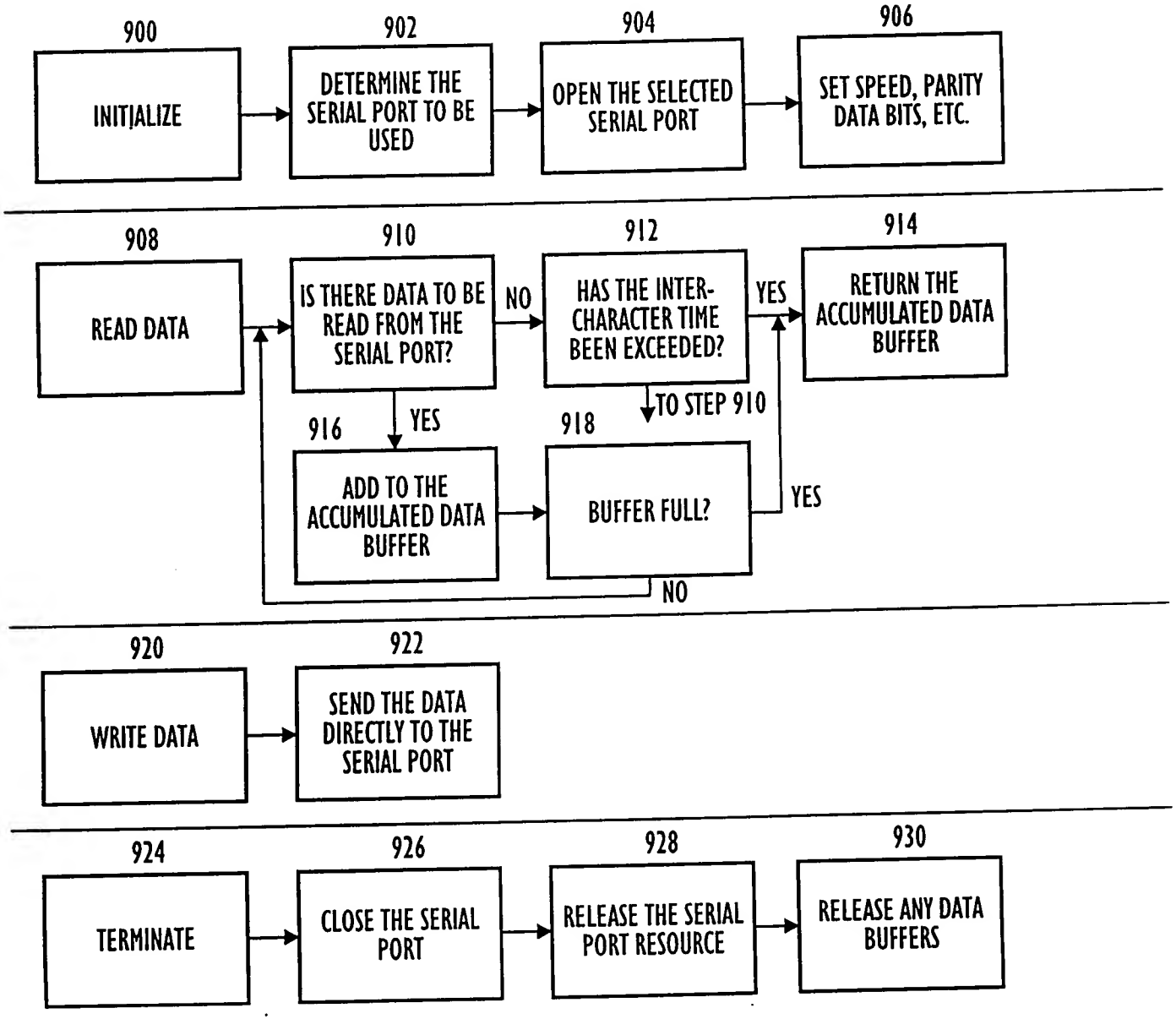

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FIG. 21

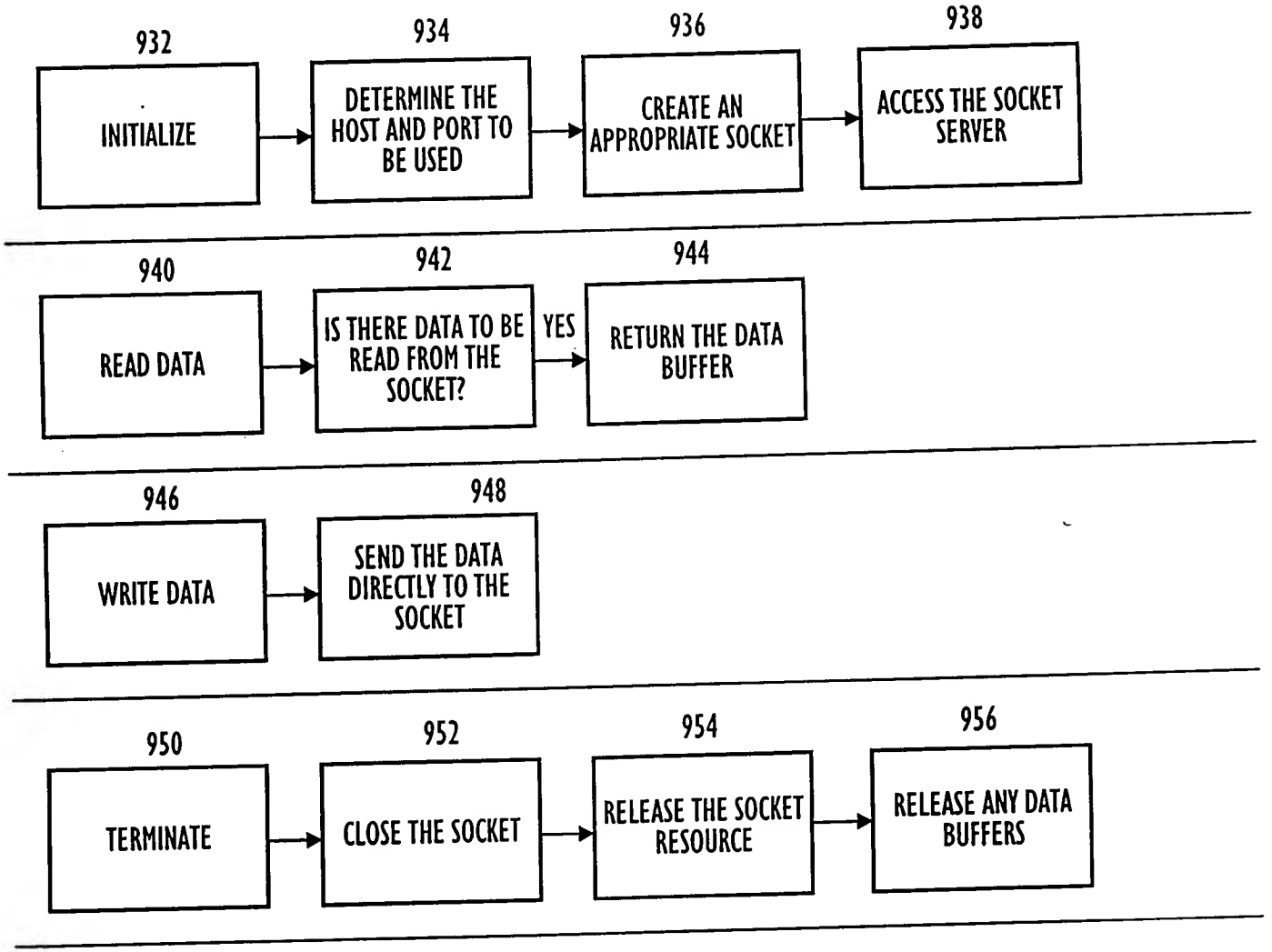

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FIG. 22

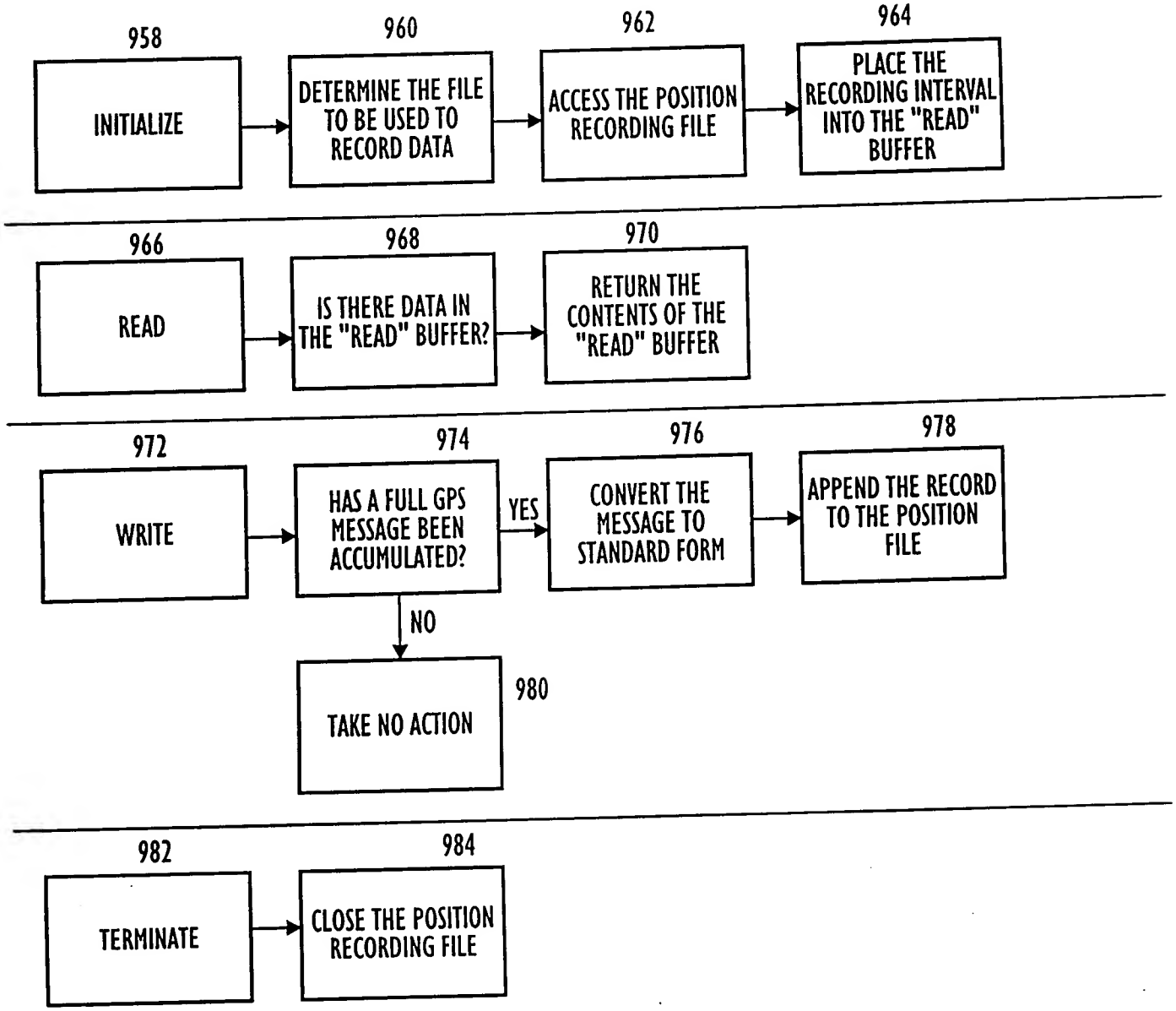

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FIG. 23A

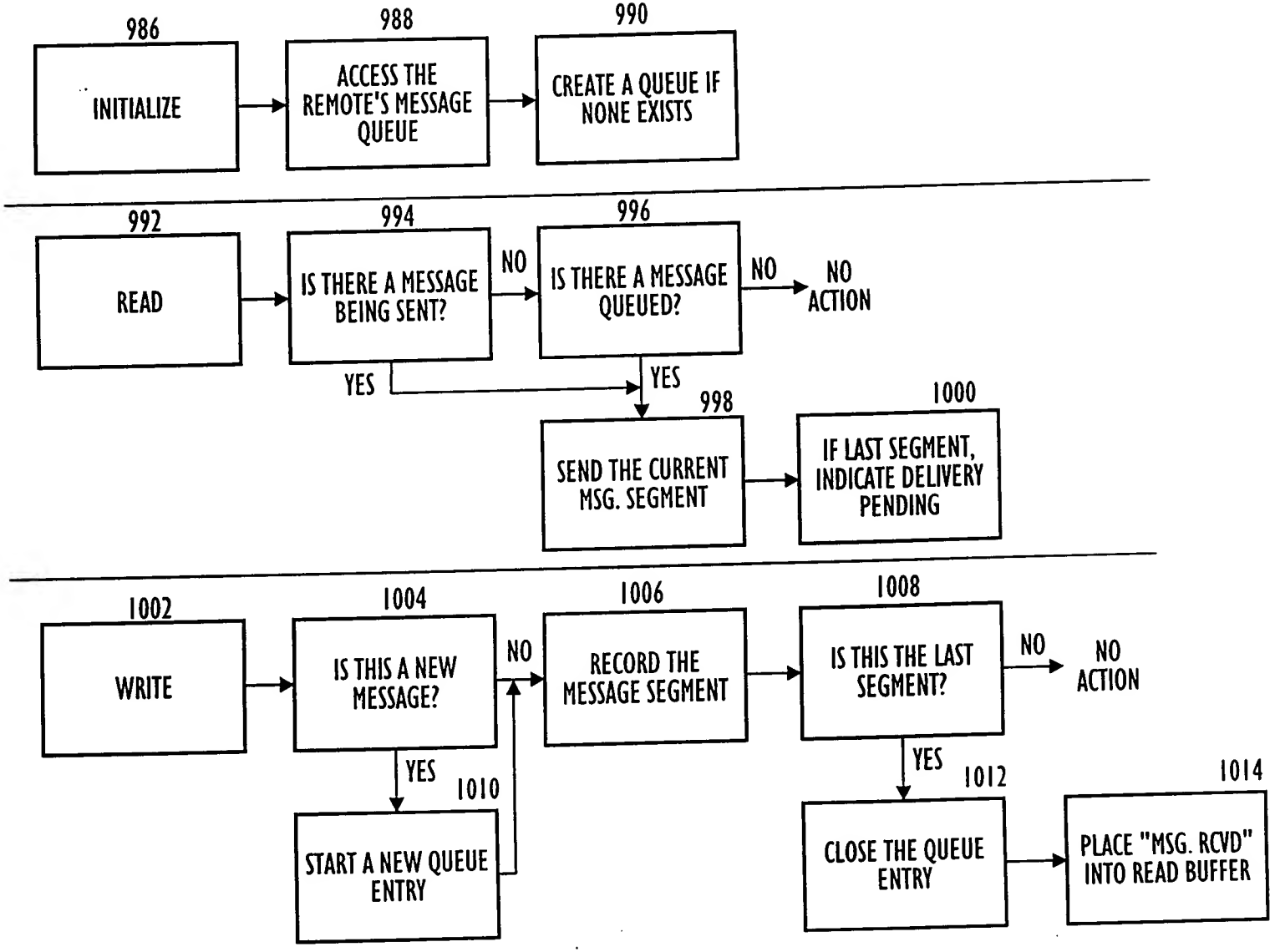

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FIG. 23B

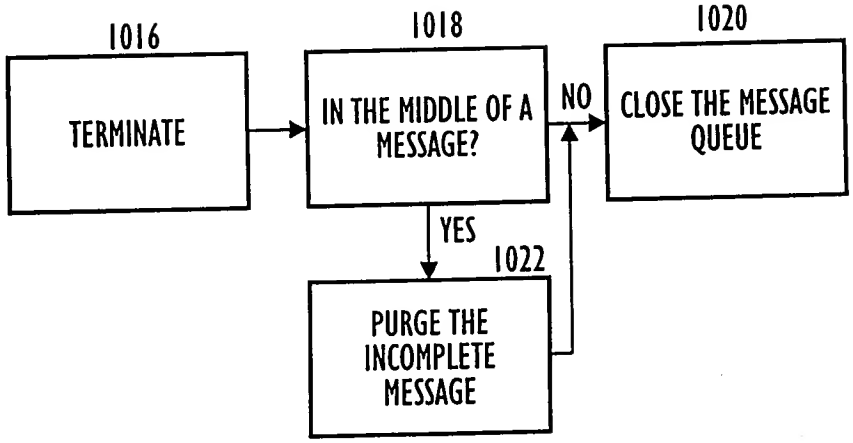

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FIG. 24

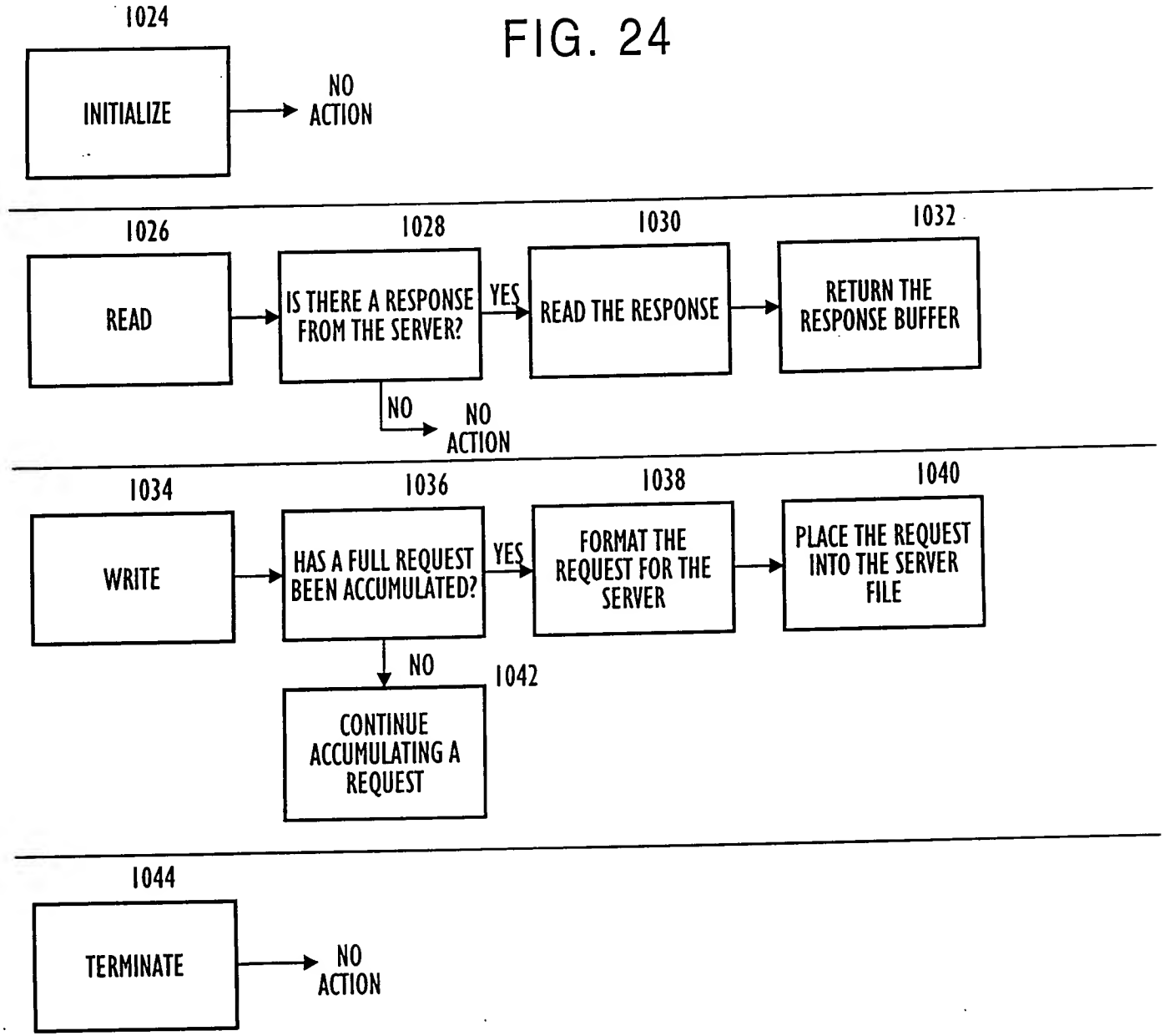

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FIG 25

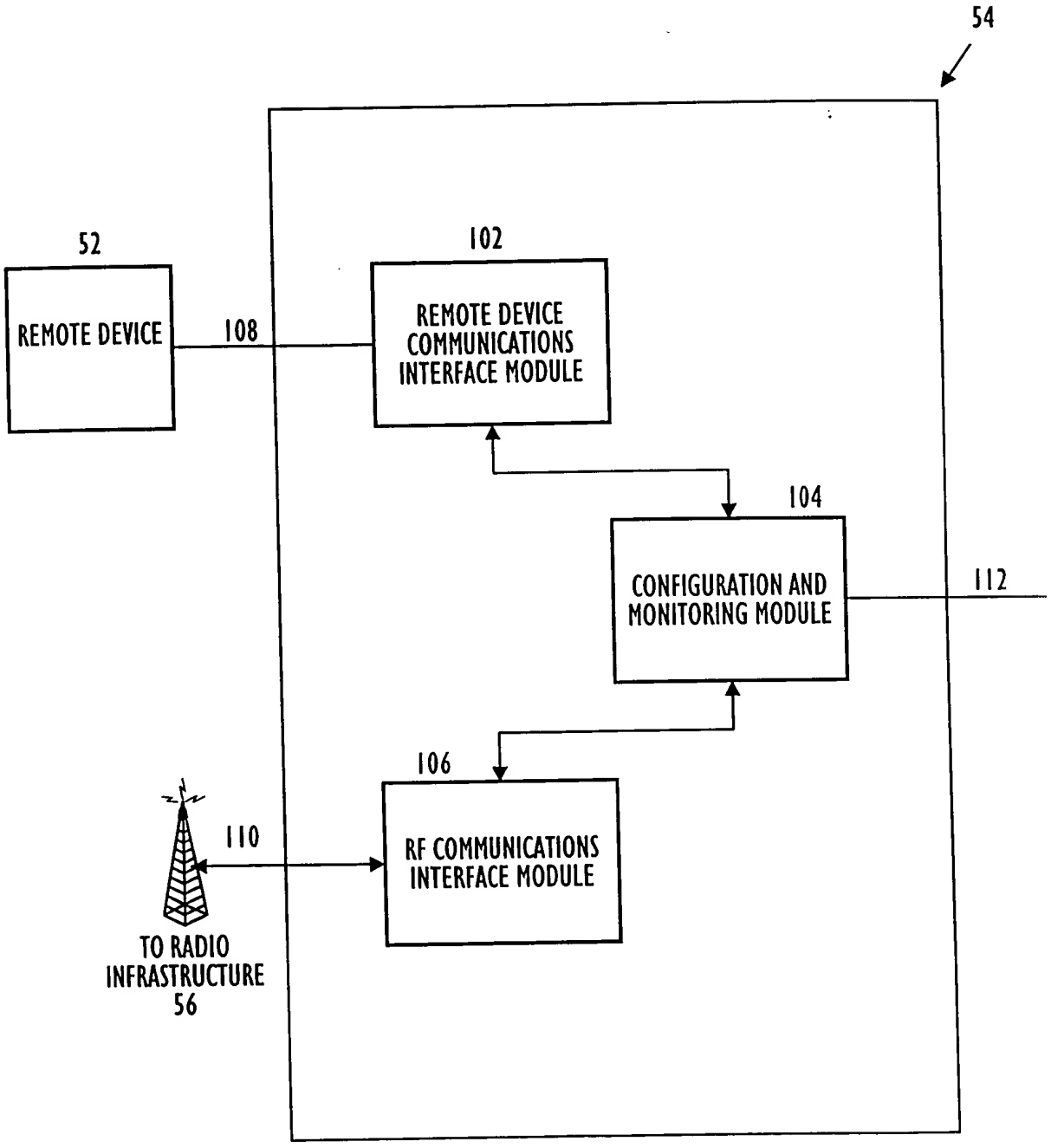

54
52
REMOTE DEVICE
108
102
REMOTE DEVICE COMMUNICATIONS INTERFACE MODULE
104
CONFIGURATION AND MONITORING MODULE
112
106
RF COMMUNICATIONS INTERFACE MODULE
110
TO RADIO INFRASTRUCTURE 56

FIG 26

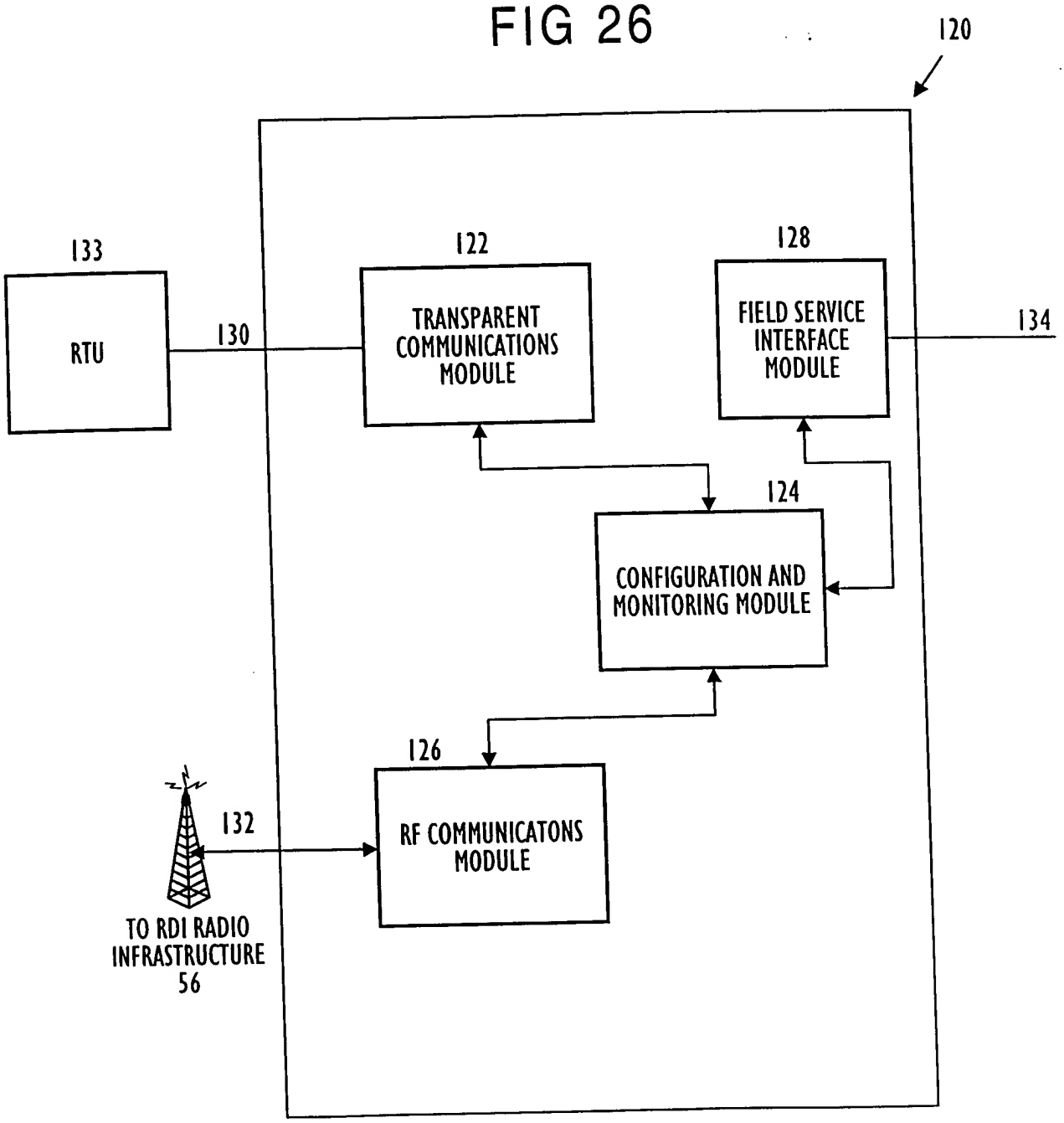

120
133
RTU
130
122
TRANSPARENT COMMUNICATIONS MODULE
128
FIELD SERVICE INTERFACE MODULE
134
124
CONFIGURATION AND MONITORING MODULE
126
RF COMMUNICATONS MODULE
132
TO RDI RADIO INFRASTRUCTURE 56

FIG 27

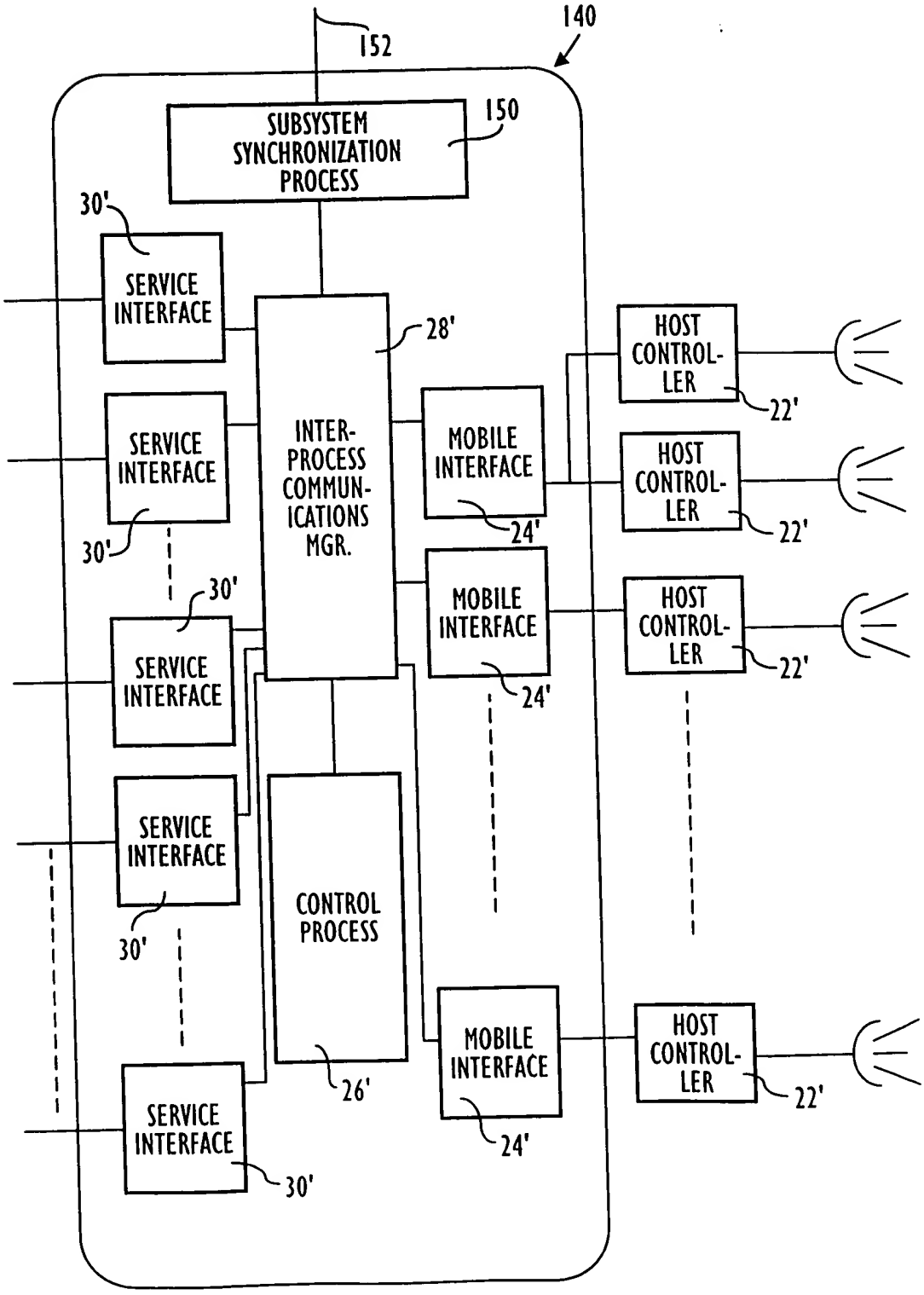

140
152
SUBSYSTEM SYNCHRONIZATION PROCESS
150
30'
SERVICE INTERFACE
28'
INTER-PROCESS COMMUN-ICATIONS MGR.
MOBILE INTERFACE
24'
HOST CONTROL-LER
22'
CONTROL PROCESS
26'

FIG 28

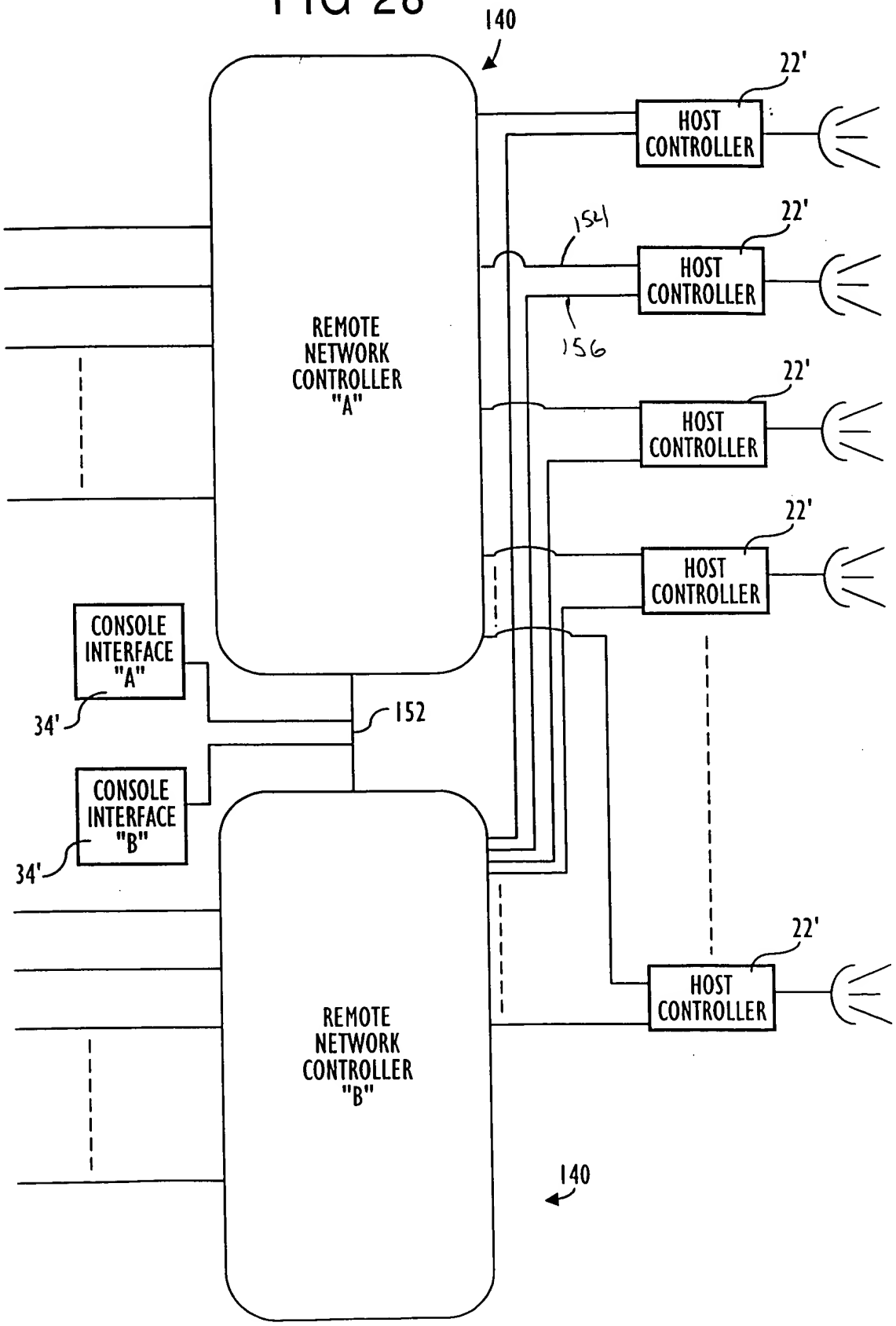
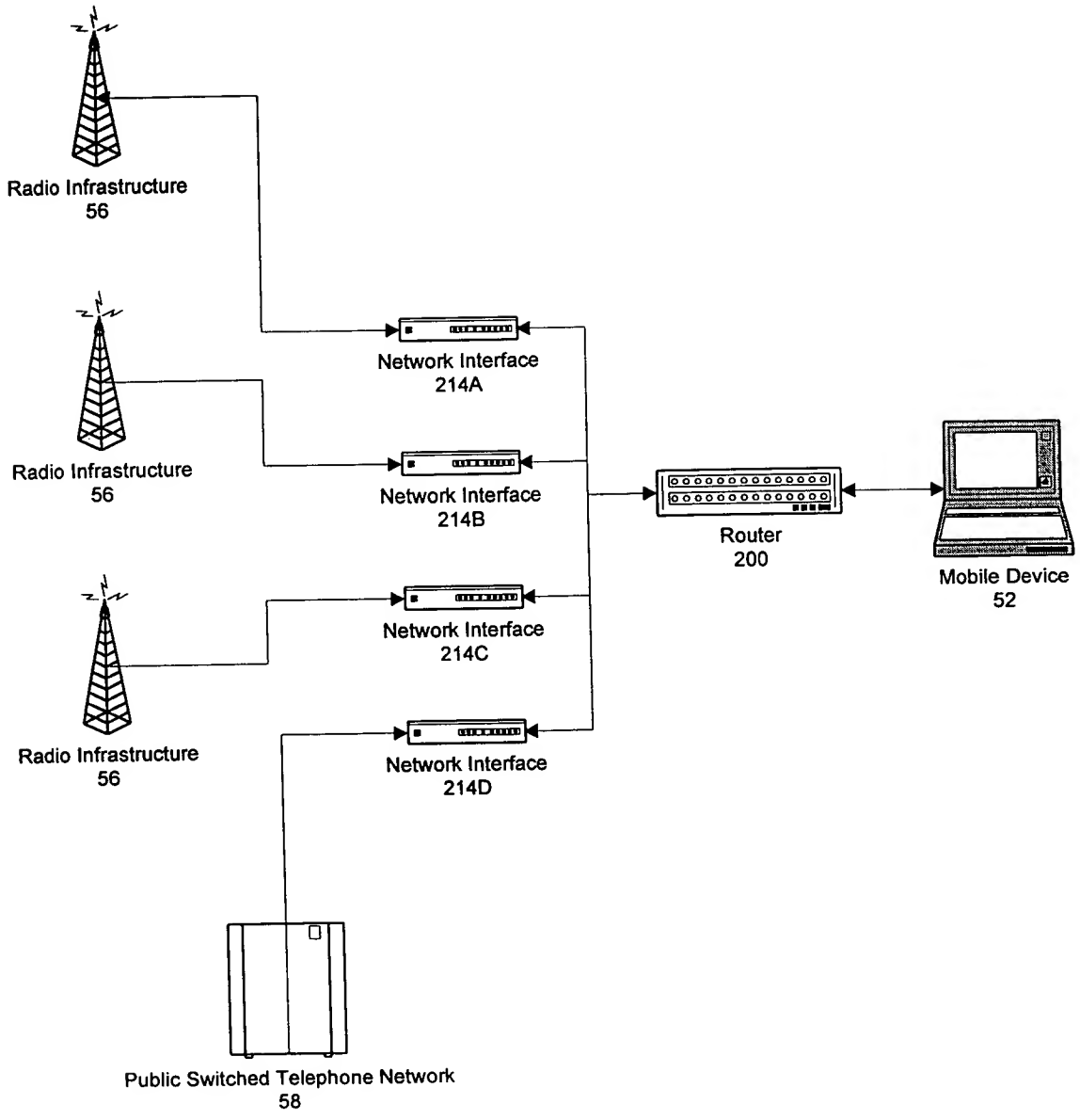

140
22'
HOST CONTROLLER
154
156
REMOTE NETWORK CONTROLLER "A"
CONSOLE INTERFACE "A"
34'
152
CONSOLE INTERFACE "B"
REMOTE NETWORK CONTROLLER "B"

Fig. 29


Radio Infrastructure
56
Radio Infrastructure
56
Radio Infrastructure
56
Network Interface
214A
Network Interface
214B
Network Interface
214C
Network Interface
214D
Router
200
Mobile Device
52
Public Switched Telephone Network
58

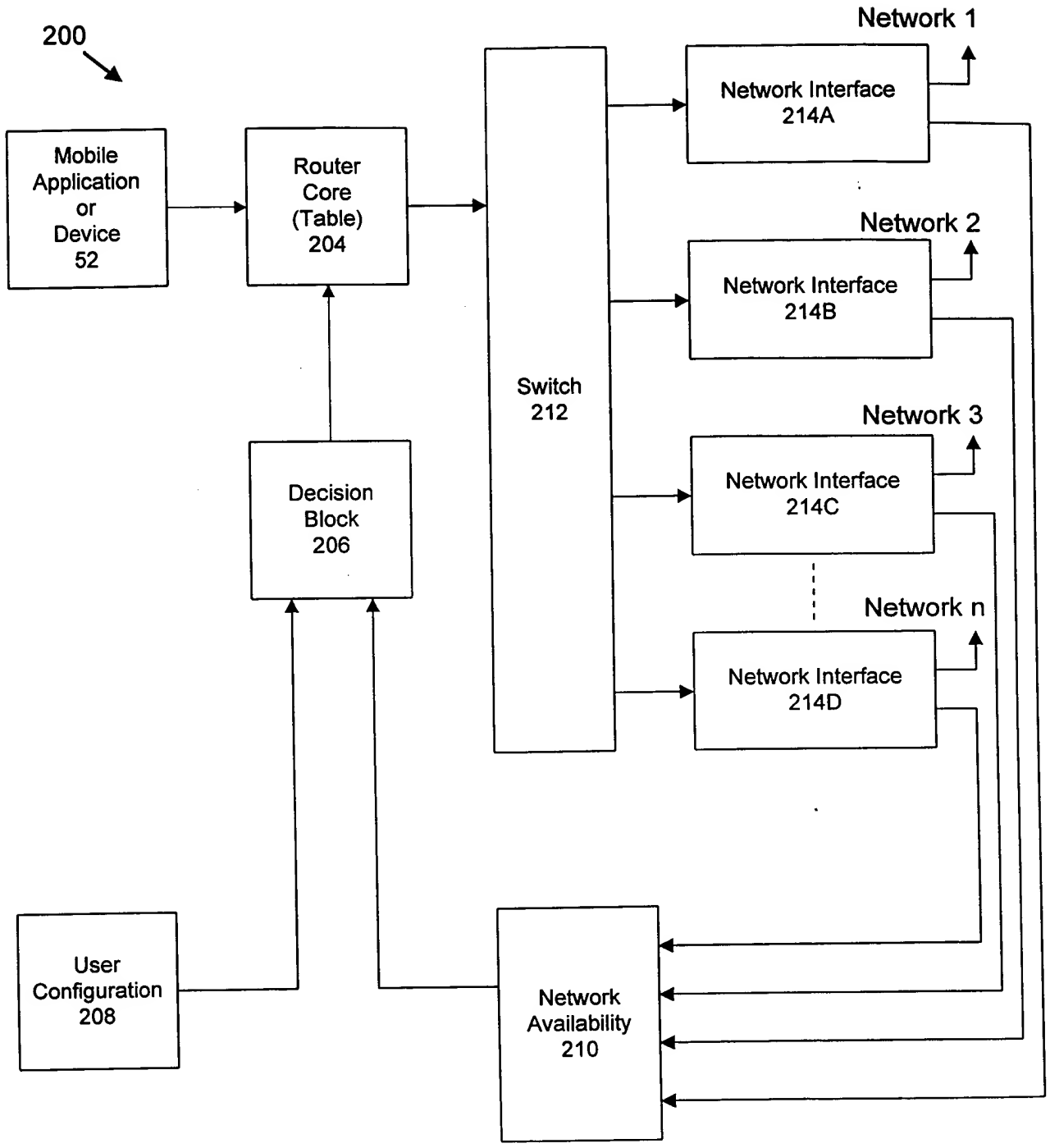
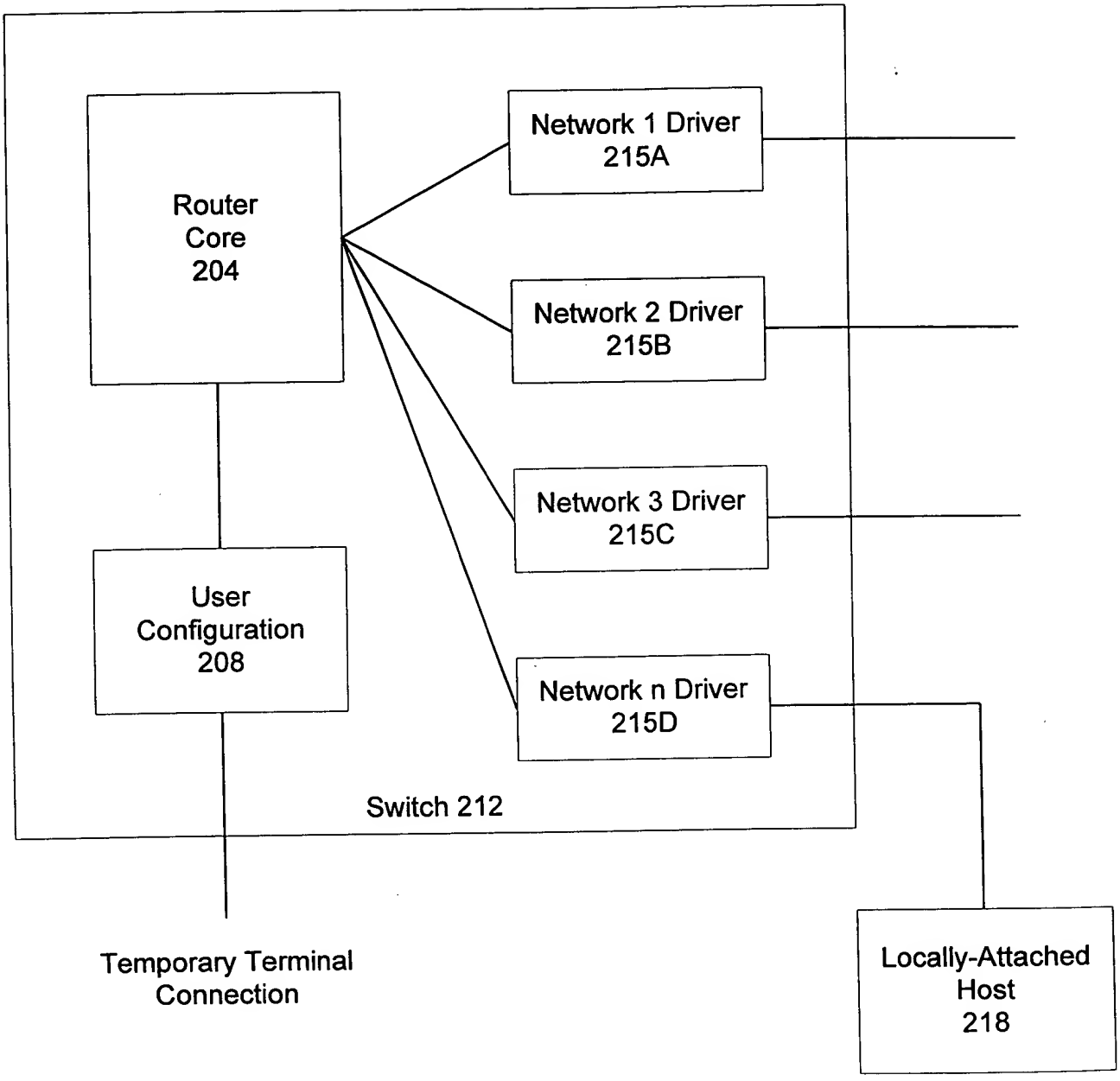

200
Mobile Application or Device 52
Router Core (Table) 204
Switch 212
Network 1
Network Interface 214A
Network 2
Network Interface 214B
Network 3
Network Interface 214C
Network n
Network Interface 214D
Decision Block 206
User Configuration 208
Network Availability 210

FIG. 30

FIG. 31


Router Core 204
Network 1 Driver 215A
Network 2 Driver 215B
Network 3 Driver 215C
Network n Driver 215D
User Configuration 208
Switch 212
Temporary Terminal Connection
Locally-Attached Host 218

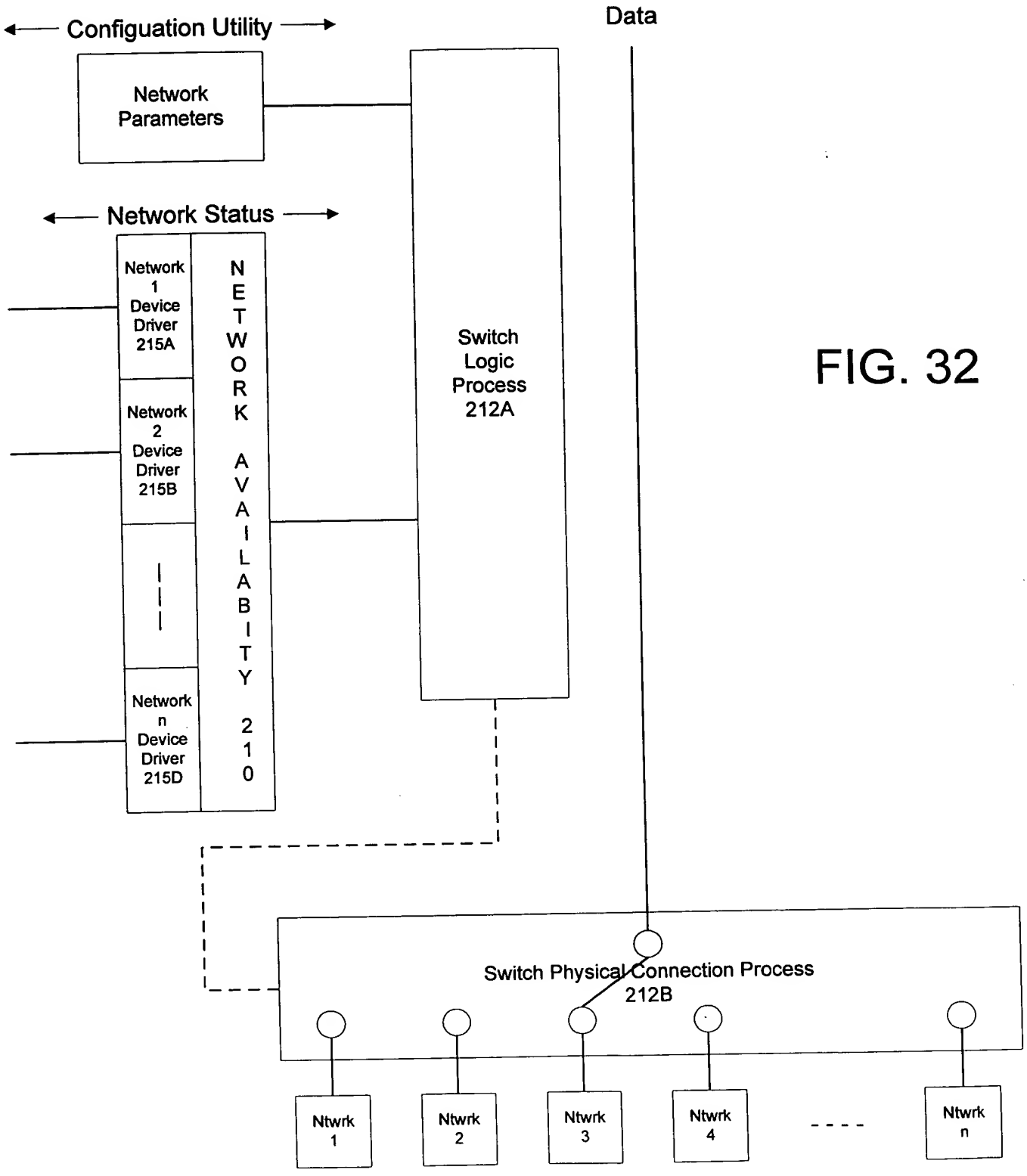


FIG. 32

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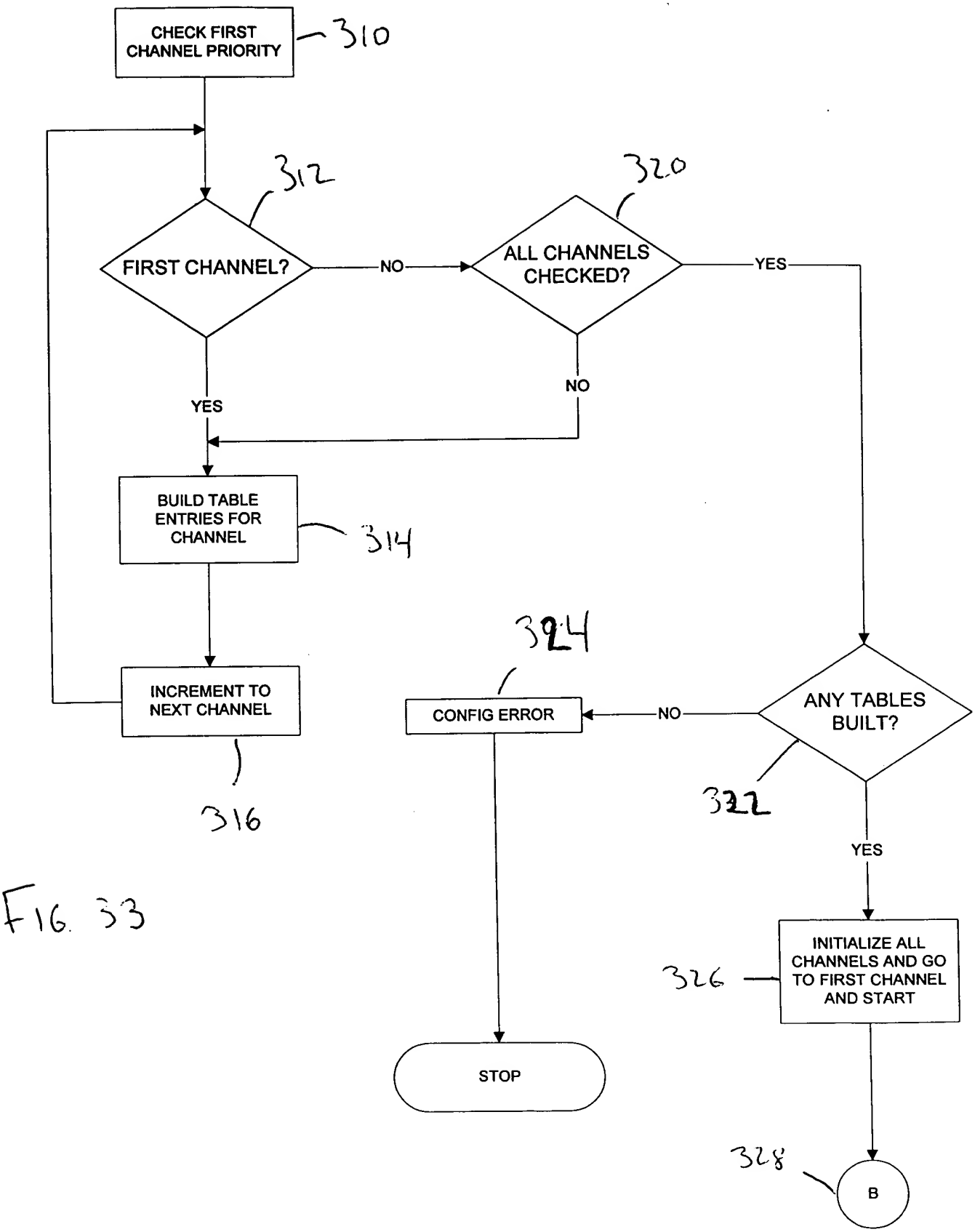
CHECK FIRST CHANNEL PRIORITY
310
312
FIRST CHANNEL?
NO
320
ALL CHANNELS CHECKED?
YES
NO
YES
BUILD TABLE ENTRIES FOR CHANNEL
314
INCREMENT TO NEXT CHANNEL
316
324
CONFIG ERROR
NO
ANY TABLES BUILT?
322
YES
INITIALIZE ALL CHANNELS AND GO TO FIRST CHANNEL AND START
326
STOP
328
B

FIG. 33

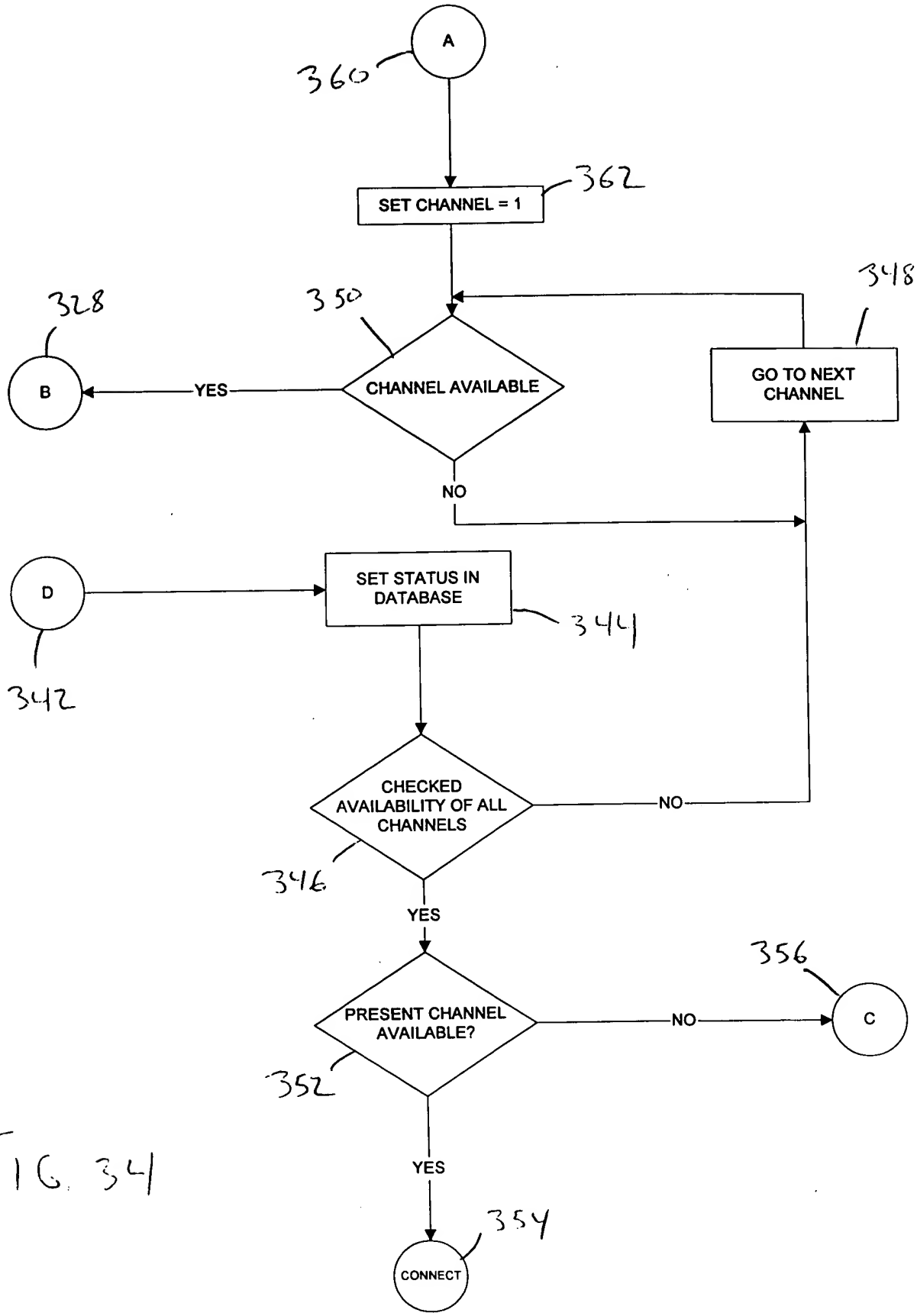

FIG. 34

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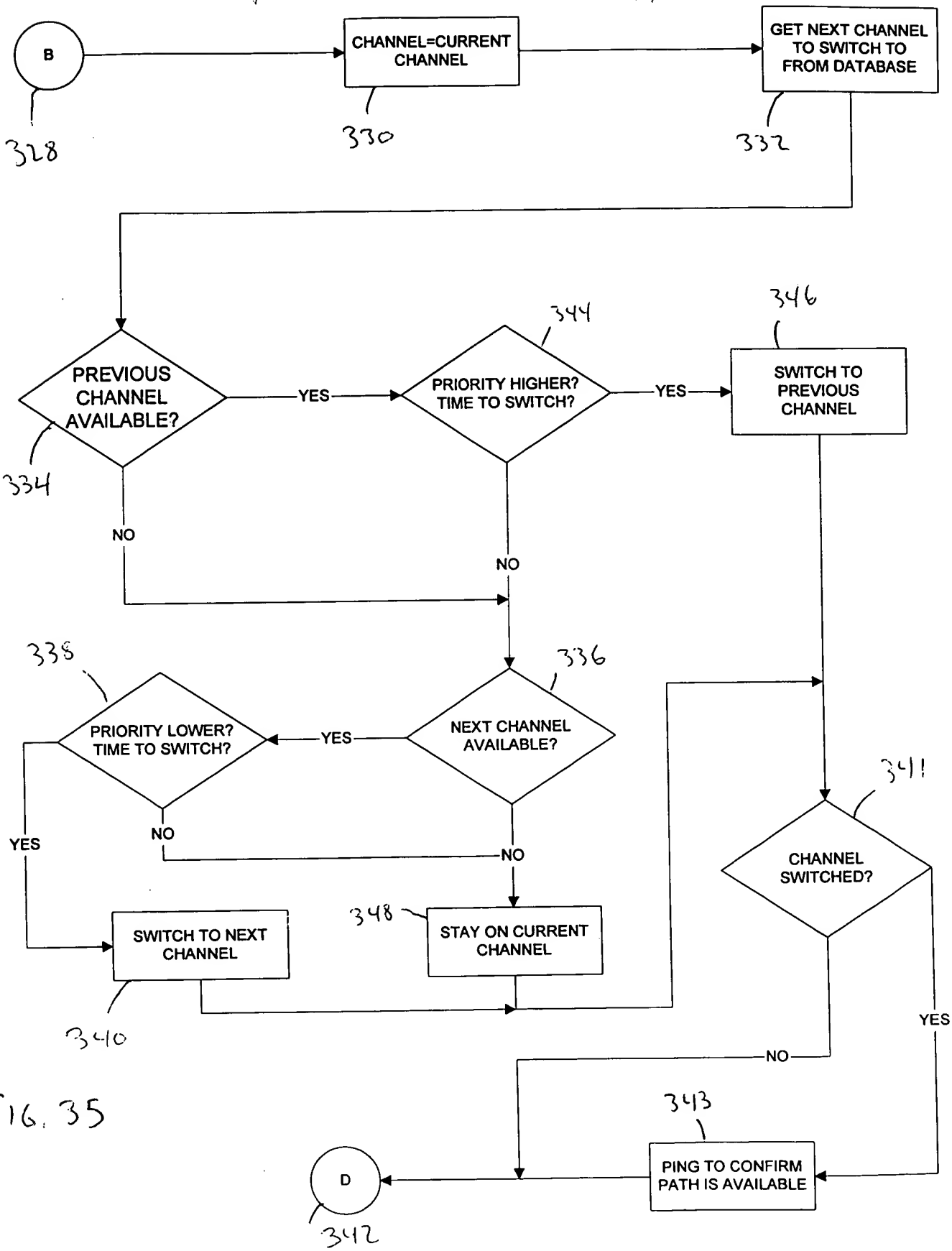
B
328
CHANNEL=CURRENT CHANNEL
330
GET NEXT CHANNEL TO SWITCH TO FROM DATABASE
332
PREVIOUS CHANNEL AVAILABLE?
334
YES
PRIORITY HIGHER? TIME TO SWITCH?
344
YES
SWITCH TO PREVIOUS CHANNEL
346
NO
NO
NEXT CHANNEL AVAILABLE?
336
YES
PRIORITY LOWER? TIME TO SWITCH?
338
YES
NO
NO
SWITCH TO NEXT CHANNEL
340
STAY ON CURRENT CHANNEL
348
CHANNEL SWITCHED?
341
YES
NO
PING TO CONFIRM PATH IS AVAILABLE
343
D
342

FIG. 35

FIG 36

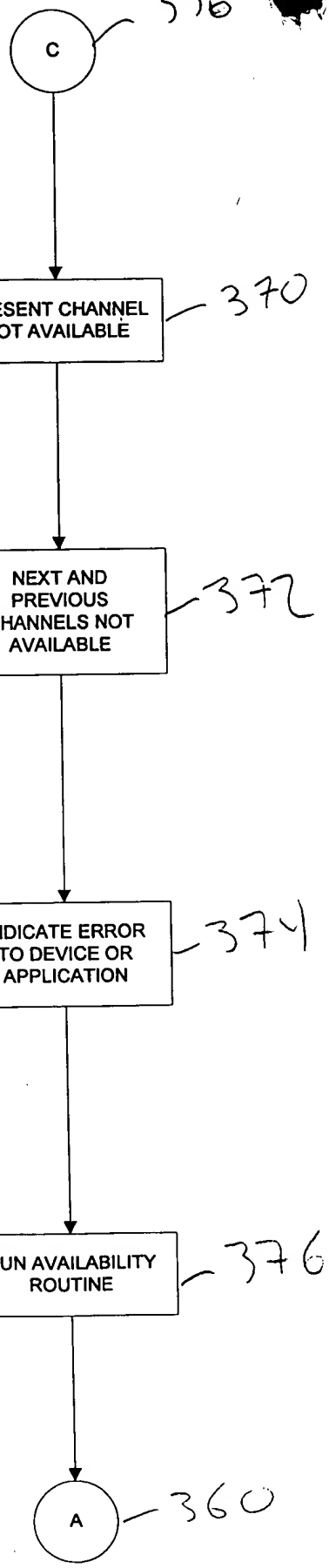

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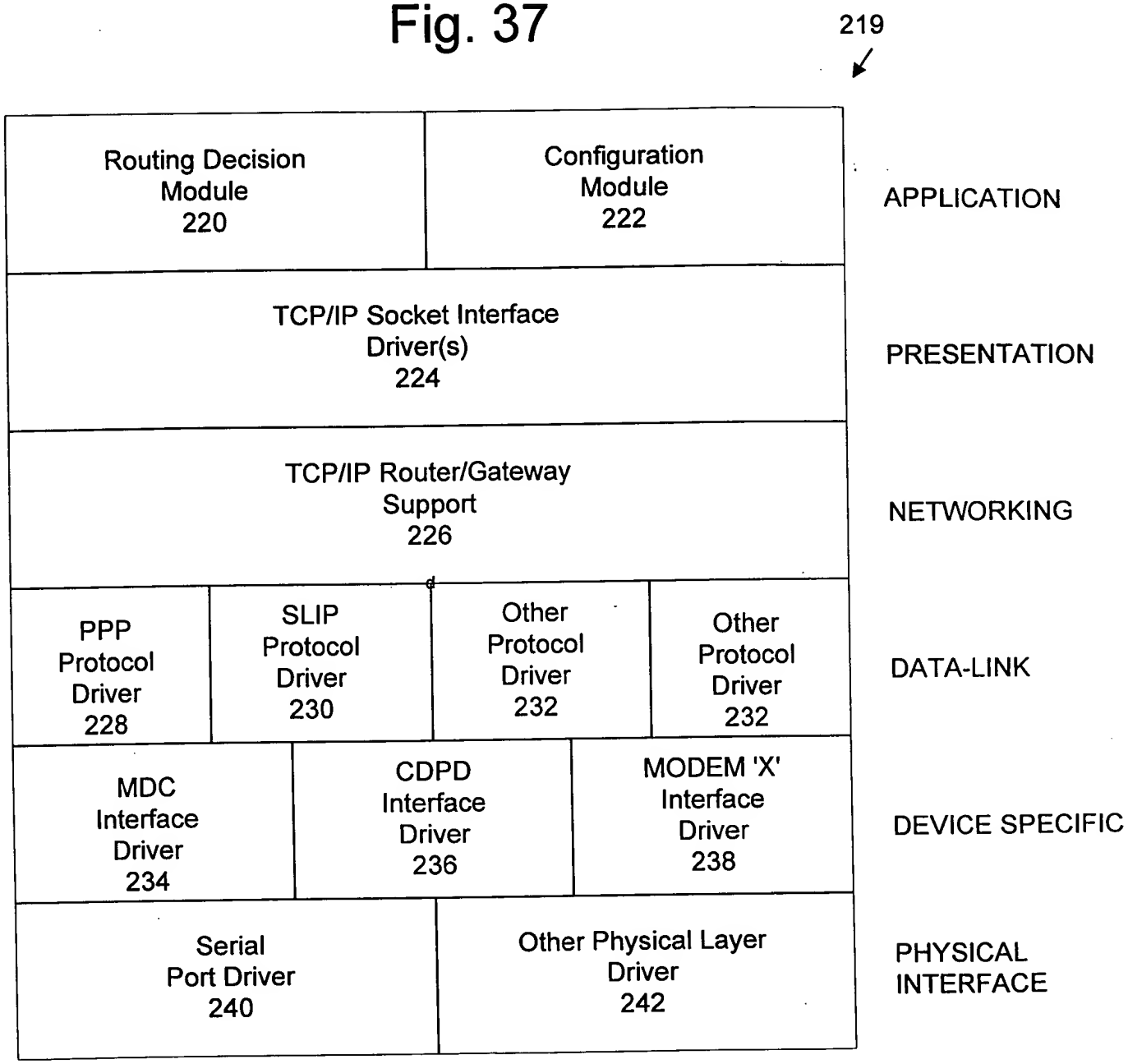
Fig. 37



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